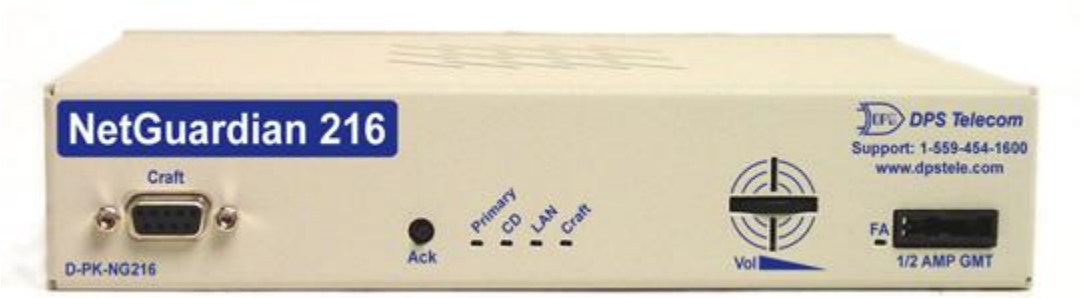
DPS Telecom

"Your Partners In Network Alarm Monitoring"

# NetGuardian 216

## USER MANUAL

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**March 17, 2008** **D-OC-UM083.17110** **Firmware Version 2.0I**

| Revision History | |
|---|---|
| March 17, 2008 | Added RS-232 Bridging port pinout diagram. |
| July 1, 2005 | NetGuardian 216 User Manual (D-OC-UM057.01100) released. Supports Firmware Version 1.0. |
| October 31, 2005 | NetGuardian 216 User Manual (D-OC-UM05A.31100) released. Support for DCP reporting over T202 modem added. |
| November 4, 2005 | NetGuardian 216 User Manual D-OC-UM05B.04100 released. Supports Firmware version 2.0, Improvements to Firmware Load added. |
| June 2, 2006 | NetGuardian 216 User Manual released. Updated 202 Tune Modem section. |

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# 1 NetGuardian 216 Overview

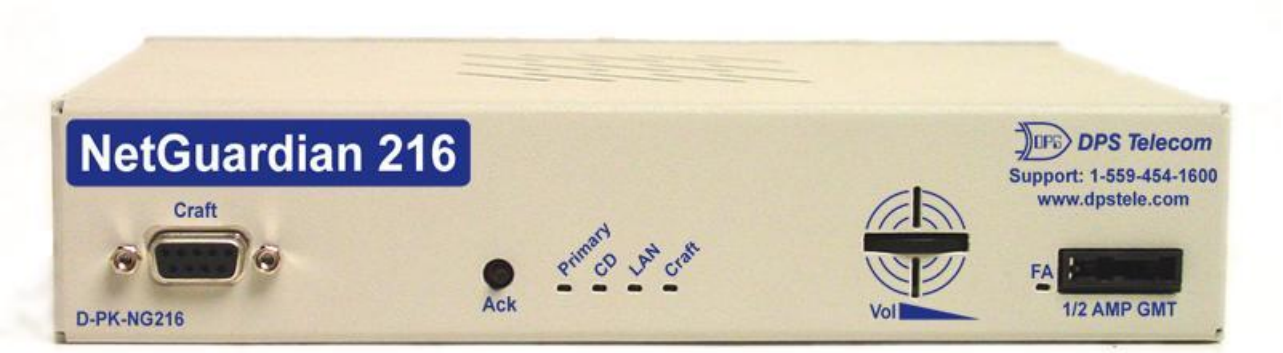



***Fig 1.1.*** *Compact, easy-to-install, right-size capacity — the NetGuardian 216 makes it cost-effective to monitor every site in your network.*

**Effective, easy-to-install, light-capacity alarm monitoring**
The NetGuardian 216 is a compact, LAN-based light-capacity remote telemetry unit. The NG216 is designed for easy installation at small remote sites, making it cost-effective to deploy alarm monitoring throughout your entire telecom network.

**Right-size capacity for small sites**
The NG216 is scaled to the needs of small sites like remote huts, collocation racks and enclosed cabinets — anyplace where a large-capacity RTU would be more than you need.

- **16 discrete alarm inputs**
- **2 analog alarm inputs**
- **2 control relays**

**Reach-through serial port gives LAN access to on-site equipment**
The NG216 also features a reach-through serial port. This port provides remote users with LAN-based Telnet access to a variety of on-site telecom equipment, including switches, radios, PBXs and many other devices.

**SNMP or T/Mon NOC**
The NetGuardian 216 can report alarms to any SNMP manager or to the DPS Telecom T/Mon NOC Remote Alarm Monitoring System. The NG216 can report SNMP over UDP or TCP and can report to T/Mon NOC over UDP, TCP, serial port or T202 modem connection.

**Easy installation and configuration**
Since it's LAN-based, the NetGuardian 216 installs quickly and easily, without the expense of laying dedicated lines.

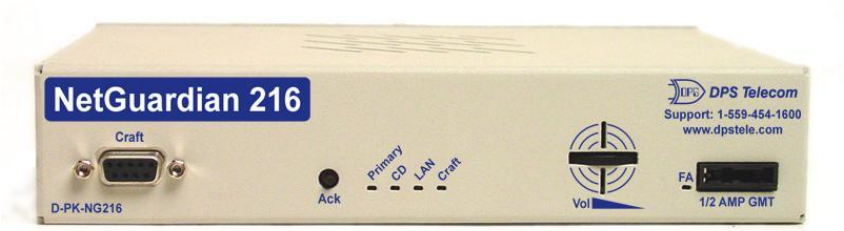
The unit mounts in any 19" or 23" rack and occupies only 1 RU. The unit has simple rear-panel connectors for alarm inputs.

The NG216 ships with T/NG216, a free Windows-based configuration utility. You can configure and provision the unit on-site through the craft port or remotely over LAN — so you don't have to physically drive to the site just to change a setting.

The NetGuardian 216 stores its configuration information in nonvolatile RAM, where it is retained even if the unit loses power.

# 2 Shipping List

Please make sure all of the following items are included with your NetGuardian 216. If parts are missing, or if you ever need to order new parts, please refer to the part numbers listed and call DPS Telecom at **1-800-622-3314**.




**NetGuardian 216**
**D-PK-NG216**

**NetGuardian 216 User Manual**
**(PDF Manual, MIBs and T/NG216 Software)**

**NetGuardian 216 Resource CD**

**6 ft. DB9M-DB9F Download Cable**
**D-PR-045-10A-04**

**14 ft. Ethernet Cable**
**D-PR-923-10A-14**

**19" Rack Ear**

**Wall Mount Bracket**

**x 4**

**Four 3/8" Ear Screws**

**x 2**

**Two Standard Rack Screws**

**Two Metric Rack Screws**

**Two 1/2-Amp GMT Fuse**

**Power Connector Plug**

**4-Pin Connector Plug**

**Pads**

# 3 Specifications

**Discrete Alarm Inputs:** 16 (reversible)

**Analog Alarm Inputs:** 2

**Analog Input Range:** –90 to 90 VDC or 4 to 20 mA

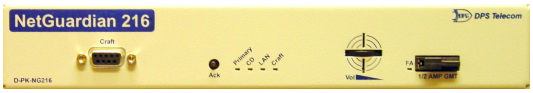
**Analog Thresholds:** 4

**Control Relays:** 2

**Protocols:** SNMP
DCPx, DCPf, DCP, DCP1 (T/Mon NOC reporting)

**Dimensions:** 1.720" H x 8.375" W x 6.626" D (4.369 cm x 21.273 cm x 16.830 cm)
1.720" H x 10.489" W x 6.636" D (4.369 cm x 26.641 cm x 16.855 cm)
Weight: 1.8425 lb (***Wide-Case model***)

**Normal NG216 Case**




**NG216 Wide Case**

**Mounting:** 19" or 23" rack

**Power Input:** –48 VDC (–48 to –70 VDC)
Optional -48 VDC from 110 VAC wall transformer

**Current Draw:** 200 mA

**Fuse:** 1/2 Amp GMT

**Interfaces:** 1 RJ45 10BaseT Ethernet port
1 50-pin connector (alarm inputs and control outputs)
1 4-pin connector (analog alarm inputs)
1 DB9 front-panel craft port
1 DB9 serial port

**Visual Interface:** 8 LEDs

**Audible Notification:** Alarm speaker with volume control and silence button

**Operating Temperature:** 32°–140° F (0°–60° C)

**Operating Humidity:** 0%–95% noncondensing

# 4 Installation

## 4.1 Tools Needed

To install the NetGuardian, you'll need the following tools:

**Phillips No. 2 Screwdriver**

**Small Standard No. 2 Screwdriver**

**PC with T/NG216 installed**

## 4.2 Mounting

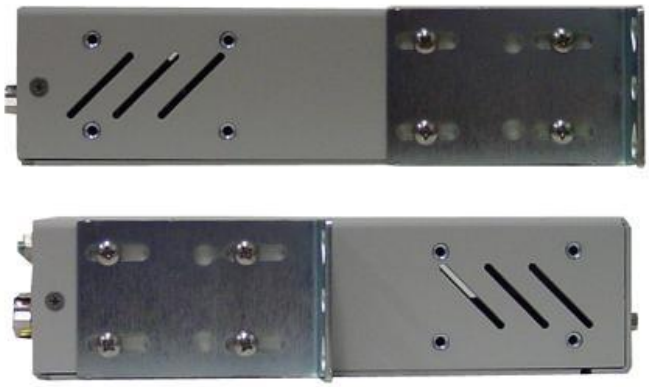


***Fig. 4.2.1.*** *The NetGuardian 216 can be flush or rear-mounted*

The compact NetGuardian 216 occupies only half the width of a standard rack unit. Only one rack ear is supplied with the NetGuardian 216, and the rack ear can be mounted on the left or right side of the unit. The NetGuardian 216 mounts in a 19" or 23" rack, and can be mounted on the right or left, in the flush-mount or rear mount locations, as shown in Figure 4.2.1.

The rack ears can be rotated 90° for wall mounting or 180º for other mounting options not shown.

Use the included wall mount bracket to mount the NetGuardian 216 vertically on the wall.

## 4.3 Power Connection

***Fig. 4.3.1.*** *Power connector.*

The NetGuardian 216's power connector is a screw terminal barrier plug, located on the left side of the back panel. (See Figure 4.3.1)

**Before you connect a power supply to the NetGuardian 216, test the voltage of your power supply:**

- Connect the black common lead of a voltmeter to the ground terminal of the battery, and connect the red lead of the voltmeter to the battery's –48 VDC terminal. The voltmeter should read between **–43 and –53 VDC.** If the reading is outside this range, test the power supply.

**To connect the NetGuardian to a power supply, follow these steps:**

1. Remove the fuse from the front panel of the NetGuardian 216. **Do not reinsert the fuse until all power and network connections have been made**.
2. Remove the power connector plug from the NetGuardian 216's power connector. Note that the plug can be inserted into the power connector only one way — this ensures that the barrier plug can only be reinserted with the correct polarity. Note that the **–48V terminal is on the left** and the **GND terminal is on the right**.
3. Insert a **battery ground** into the power connector plug's **right terminal** and tighten the screw; then insert a **–48 VDC** line to the plug's **left terminal** and tighten its screw.
4. Push the power connector plug firmly back into the power connector.
5. Reinsert the fuse to power up the NetGuardian 216. The PWR LED by the power connector will light **GREEN**. The front panel LEDs will flash **RED** and **GREEN**.

## 4.4 LAN Connection

***Fig. 4.4.1.*** *Ethernet port*

To connect the NetGuardian 216 to the LAN, insert a standard RJ45 Ethernet cable into the 10BaseT Ethernet port on the back of the unit. (See Figure 4.4.1.) If the LAN connection is OK, the LNK LED will light **SOLID GREEN**.

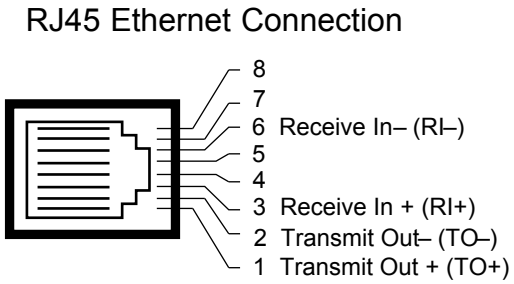



***Fig. 4.4.2*** *Ethernet connection pinout*

The pinout for the RJ45 connection is shown in Figure 4.4.2, above.

# 4.5 Discrete Alarms

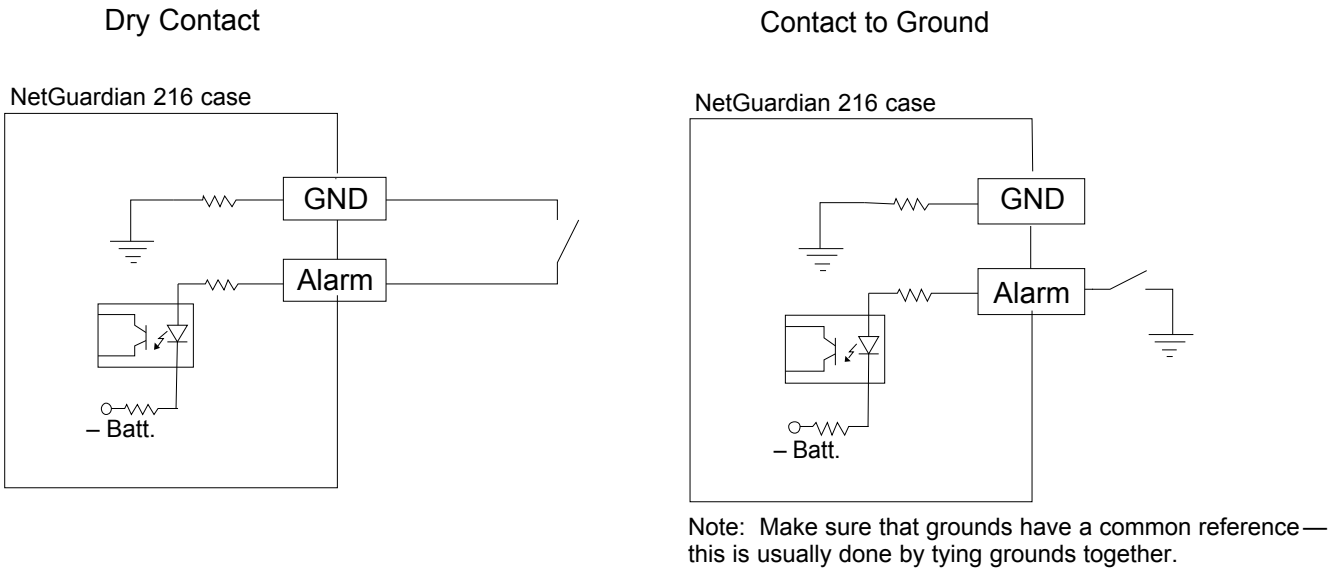



***Fig. 4.5.1.*** *Discrete alarm points can connect as a dry contact or a contact to ground*

The NetGuardian 216 features 16 discrete alarm inputs — also called digital inputs or contact closures. Discrete alarms are either activated or inactive, so they're typically used to monitor on/off conditions like power outages, equipment failures, door alarms and so on.

The NetGuardian 216's discrete alarm points are single-lead signals referenced to ground. The ground side of each alarm point is internally wired to ground, so alarm points can connect either as a dry contact or a contact to ground.

In a dry contact alarm, the alarm lead brings a contact to the ground lead, activating the alarm.

In a contact to ground alarm, a single wire brings a contact to an external ground, activating the alarm.

For a diagram, see Figure 4.5.1, above.

You can reverse the polarity of each individual discrete alarm point, so that the alarm is activated when the contact is open. To reverse the polarity of an alarm point, use the included T/NG216 configuration software. For instructions, see Section 6.6, "Alarms Tab: Alarm Description, Polarity and Trap Options."

## 4.6 50-Pin Alarm and Control Relay Connector

***Fig. 4.6.1.*** *Main 50-pin alarm and control relay connector*

The primary connector for discrete alarms, analog alarms and control relays is the 50-pin connector on the NetGuardian 216's back panel. (See Figure 4.6.1, above.)

**Note:** You can optionally connect analog inputs through the 4-pin barrier plug connector, instead of the 50-pin connector. For more information, see Section 4.8.1, "Optional 4-Pin Analog Alarm Connector."

### 4.6.1 50-Pin Connector Pinout Table

| Discretes 1–16 | | |
|---|---|---|
| | GND | ALM |
| **ALM 1** | 1 | 26 |
| **ALM 2** | 2 | 27 |
| **ALM 3** | 3 | 28 |
| **ALM 4** | 4 | 29 |
| **ALM 5** | 5 | 30 |
| **ALM 6** | 6 | 31 |
| **ALM 7** | 7 | 32 |
| **ALM 8** | 8 | 33 |
| **ALM 9** | 9 | 34 |
| **ALM 10** | 10 | 35 |
| **ALM 11** | 11 | 36 |
| **ALM 12** | 12 | 37 |
| **ALM 13** | 13 | 38 |
| **ALM 14** | 14 | 39 |
| **ALM 15** | 15 | 40 |
| **ALM 16** | 16 | 41 |

| Control Relays 1–2* | | | |
|---|---|---|---|
| | NO | NC | CO |
| **CTRL 1** | 17 | 42 | 43 |
| **CTRL 2** | 19 | 44 | 18 |

| Fuse Alarm** | | |
|---|---|---|
| | NO | CO |
| **FA** | 20 | 45 |

| Analogs 1–2 | | |
|---|---|---|
| | + | – |
| **ANA 1** | 23 | 48 |
| **ANA 2** | 24 | 49 |

| GND | | |
|---|---|---|
| **GND** | 25 | 50 |

***** NO = Normally Open, NC = Normally Closed, CO = Common

** Control relay is closed if fuse blows.

***Table 4.6.1.A.*** *50-pin connector pinout*

### 4.6.2 50-Pin Connector Pinout Diagram

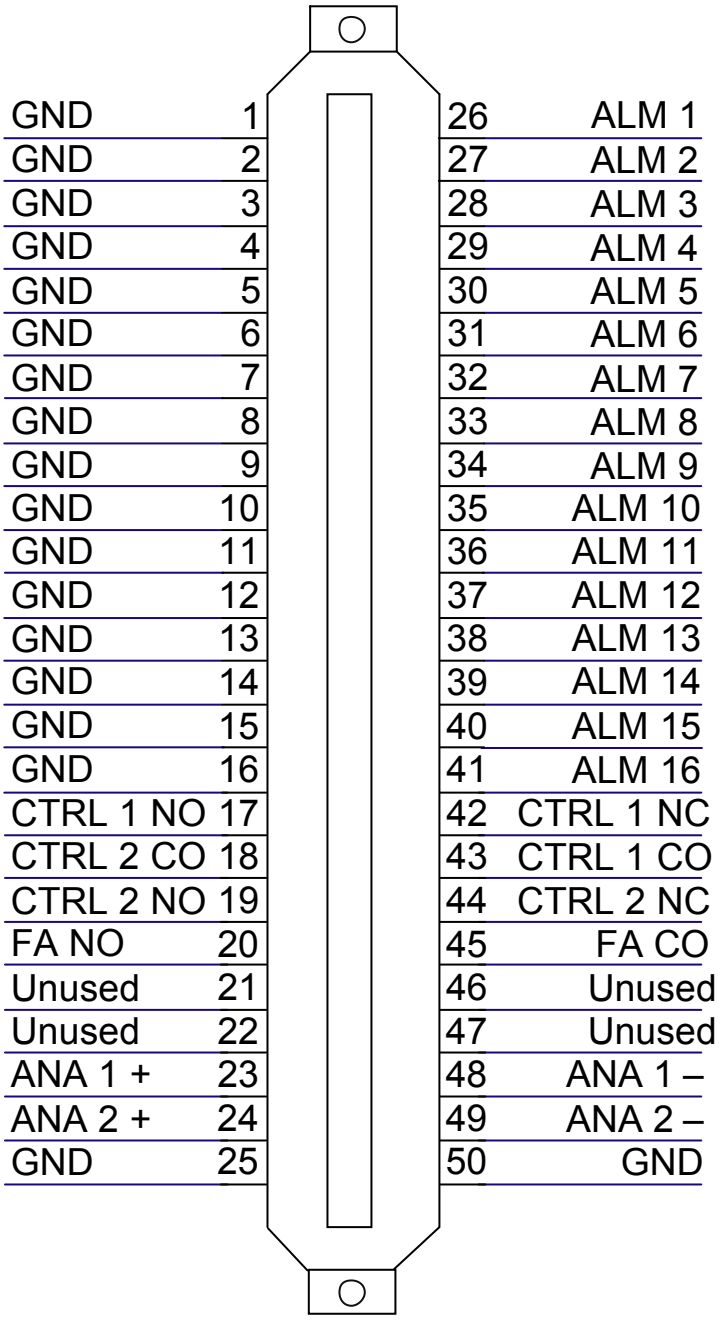



***Fig. 4.6.2.1.*** *50-pin connector pinout*

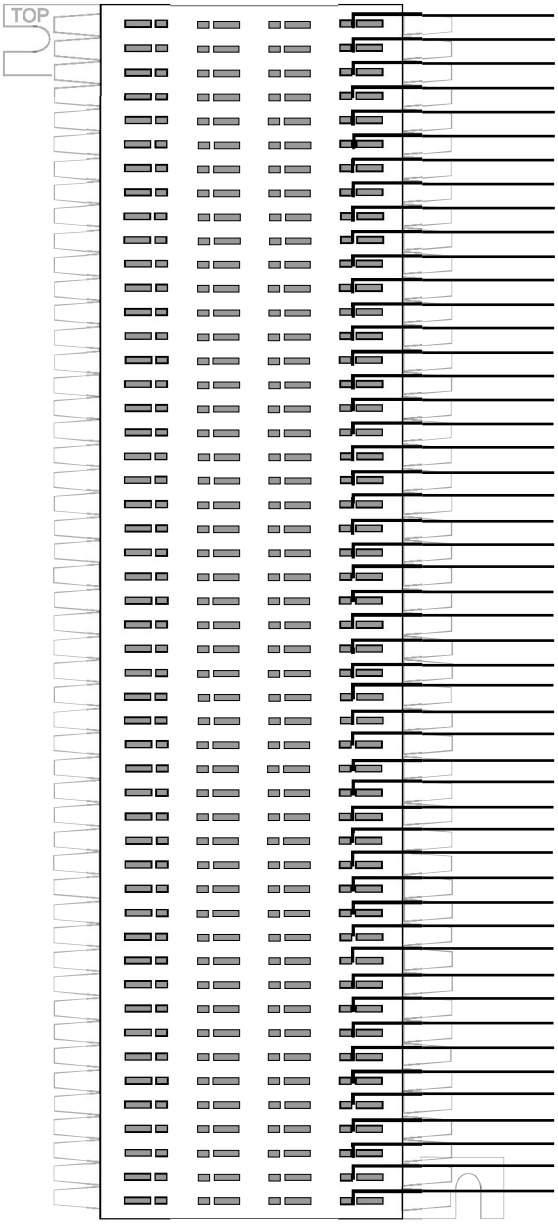
## 4.7 Optional Wire-Wrap Back Panel

***Fig. 4.7.1*** *The wire-wrap back panel*

The optional wire-wrap back panel provides wire-wrap connections for the NetGuardian's alarms (discrete and analog) and control relays. Screw the board into the holes on either side of the "Discretes 1-16/Analogs 1-4/Relays 1-2 connector" (as shown in Figure 4.7.1). To connect discrete alarms, analog alarms, and control relays to the wire-wrap panel, connect them to the pin block on the front of the panel.

**Caution:** Analog Channels 3 and 4 on the Wire-Wrap Panel correspond to Analog Channels 1 and 2 on the NetGuardian.

# 4.8 Optional 66 Block Connector




| Wire color (wire/stripe) | Connection | 66 Block Pair # | Corresponding 50-Pin Connector Pin # |
|---|---|---|---|
| WHT/BLU | ALM 1 | 1 | 26 |
| BLU/WHT | GND 1 | | 1 |
| WHT/ORG | ALM 2 | 2 | 27 |
| ORG/WHT | GND 2 | | 2 |
| WHT/GRN | ALM 3 | 3 | 28 |
| GRN/WHT | GND 3 | | 3 |
| WHT/BRN | ALM 4 | 4 | 29 |
| BRN/WHT | GND 4 | | 4 |
| WHT/GRY | ALM 5 | 5 | 30 |
| GRY/WHT | GND 5 | | 5 |
| RED/BLU | ALM 6 | 6 | 31 |
| BLU/RED | GND 6 | | 6 |
| RED/ORG | ALM 7 | 7 | 32 |
| ORG/RED | GND 7 | | 7 |
| RED/GRN | ALM 8 | 8 | 33 |
| GRN/RED | GND 8 | | 8 |
| RED/BRN | ALM 9 | 9 | 34 |
| BRN/RED | GND 9 | | 9 |
| RED/GRY | ALM 10 | 10 | 35 |
| GRY/RED | GND 10 | | 10 |
| BLK/BLU | ALM 11 | 11 | 36 |
| BLU/BLK | GND 11 | | 11 |
| BLK/ORG | ALM 12 | 12 | 37 |
| ORG/BLK | GND 12 | | 12 |
| BLK/GRN | ALM 13 | 13 | 38 |
| GRN/BLK | GND 13 | | 13 |
| BLK/BRN | ALM 14 | 14 | 39 |
| BRN/BLK | GND 14 | | 14 |
| BLK/GRY | ALM 15 | 15 | 40 |
| GRY/BLK | GND 15 | | 15 |
| YEL/BLU | ALM 16 | 16 | 41 |
| BLU/YEL | GND 16 | | 16 |
| YEL/ORG | CTRL 1 NC | 17 | 42 |
| ORG/YEL | CTRL 1 NO | | 17 |
| YEL/GRN | CTRL 1 CO | 18 | 43 |
| GRN/YEL | CTRL 2 CO | | 18 |
| YEL/BRN | CTRL 2 NC | 19 | 44 |
| BRN/YEL | CTRL 2 NO | | 19 |
| YEL/GRY | FA CO | 20 | 45 |
| GRY/YEL | FA NO | | 20 |
| VIO/BLU | Unused | 21 | 46 |
| BLU/VIO | Unused | | 21 |
| VIO/ORG | Unused | 22 | 47 |
| ORG/VIO | Unused | | 22 |
| VIO/GRN | ANA 1 – | 23 | 48 |
| GRN/VIO | ANA 1 + | | 23 |
| VIO/BRN | ANA 2 – | 24 | 49 |
| BRN/VIO | ANA 2 + | | 24 |
| VIO/GRY | GND | 25 | 50 |
| GRY/VIO | GND | | 25 |

***Fig. 4.8.1.*** *Optional 66 block connector pinout*

The NetGuardian 216 is also available with an optional 66 Block Connector for connecting discrete alarms, analog alarms and control relays. Pinout and wire color coding for the 66 Block are shown in Figure 4.8.1.

# 4.9 Analog Alarms

The NetGuardian's two analog alarm inputs measure continuous ranges of voltage or current. Analog alarms are typically used to monitor battery voltage, charging current, temperature or other continuously variable conditions.

The measurement range of the analog channels is –90 to +90 VDC or 4 to 20 mA.

You can connect analog alarm inputs to the NetGuardian 216 by using either the main 50-pin connector or the optional 4-pin analog alarm connector. For the 4-pin analog connector's pinout information, see Section 4.8.1, "Optional 4-Pin Analog Connector."

By default, the analog inputs are configured to measure voltage. You can switch the analog inputs to measure current by resetting jumpers on the NetGuardian 216's circuit board. For instructions, see Section 4.8.2, "Switching Analog Alarms to Current Operation."

## 4.9.1 Optional 4-Pin Analog Connector

***Fig. 4.8.1.1.*** *4-pin analog alarm input connector*

The 4-pin analog alarm input connector provides an **optional** connection for **analog alarms only**.

You can connect analog inputs to **EITHER** the primary 50-pin alarm connector **OR** the 4-pin connector, **but not both at the same time**.

The 4-pin connector is a screw terminal barrier plug similar to the power connector. To connect analog inputs, remove the connector plug, connect the leads to the appropriate terminals and reinsert the barrier plug. Note that the plug can be inserted into its socket only one way — this ensures that the connector plug can only be reinserted with the alarm inputs aligned correctly.

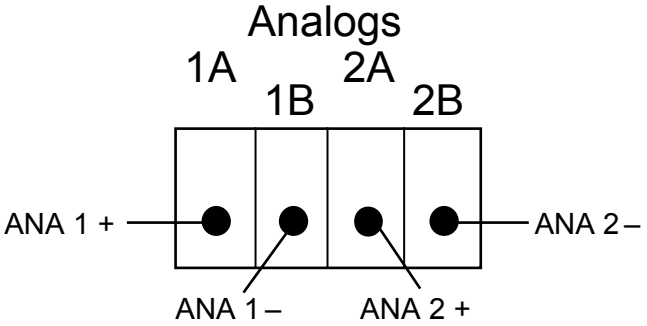



***Fig. 4.8.1.2.*** *4-pin analog connector pinout*

The pinout for the 4 pin analog connector is shown in Figure 4.8.1.2, above.

## 4.9.2 Switching Analog Alarms to Current Operation

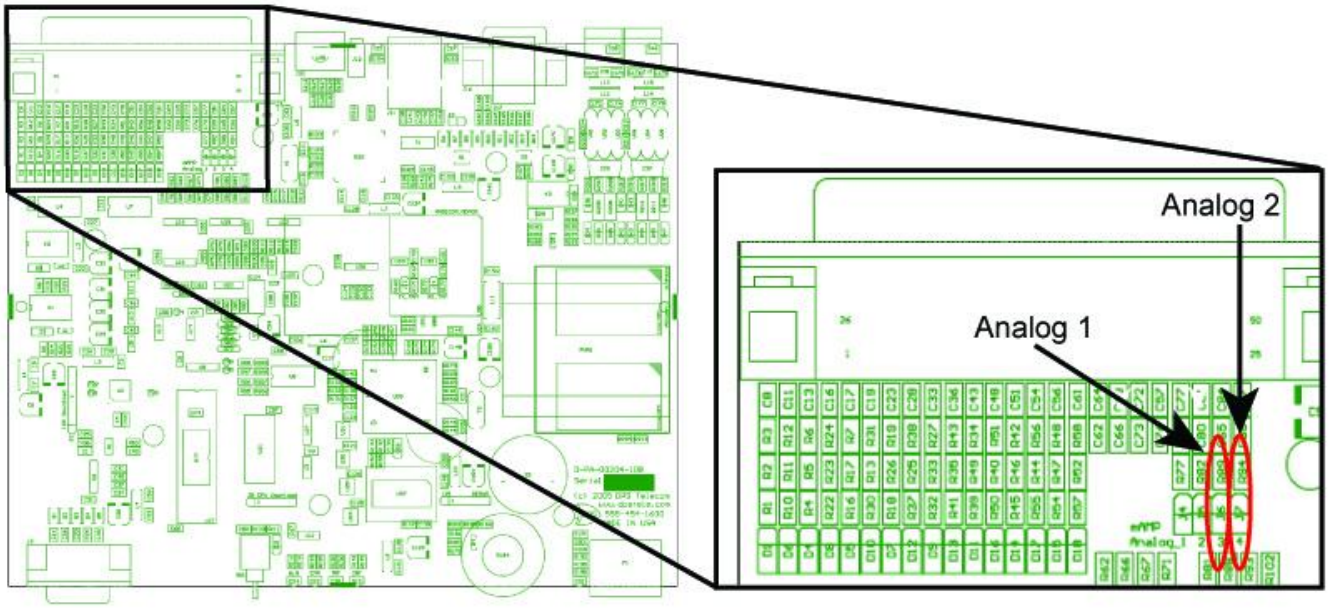



***Fig. 4.8.2.1.*** *Adjustable jumpers on the NetGuardian 216 circuit board*

By default, the analog inputs are configured to measure voltage. You can switch the analog inputs to measure current by resetting jumpers on the NetGuardian 216's circuit board.

**To rest the analog alarm voltage/current jumpers, follow these steps:**

1. Make sure the NetGuardian 216 is depowered and disconnected from all network connections.
2. Remove the screws from the sides of the NetGuardian 216 case.
3. Slide the top cover of the case off to expose the circuit board.
4. The adjustable jumpers are shown in Figure 4.8.2.1. Both alarm inputs can be individually configured for current or voltage operation.

**CAUTION:**

The Jumper labeled Analog 3 controls the voltage/current settings for Analog Input 1, and the Jumper labeled Analog 4 controls Analog Input 2.

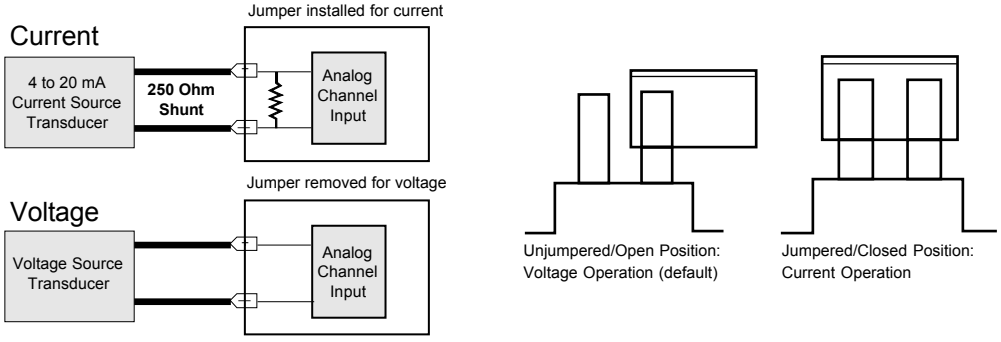



***Fig. 4.8.2.2.*** *Jumper settings for analog alarms inputs*

5. By default, both jumpers are in the unjumpered/open position, which corresponds to voltage operation, as shown in Figure 4.8.2.2. To reset an analog alarm input to current operation, reset its jumper in the closed position.

   **Note:** Each jumper inserts a 250-ohm shunt resistor across the input. This must be taken into account when defining the analog input reference scale. For more information, see Section 6.9.1, "Analog Channel Scaling Reference Tool."

6. Slide the top cover of the case back into position and replace the screws.
7. Reconnect and power up the NetGuardian 216.

## 4.10 Back Panel Serial Port

***Fig. 4.9.1.*** *Serial port*

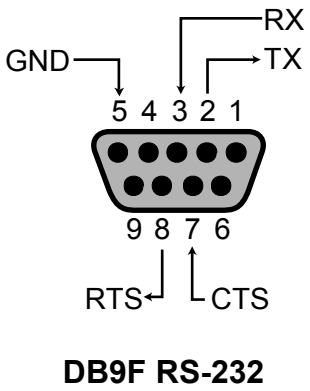
The NetGuardian 216's DB9 RS-232 reach-through serial port is located on the back panel, where it is labeled "Primary," as shown in Figure 4.9.1. The serial port can be used for three different functions:

- Reach-through proxy connection for LAN-based Telnet access to switches, radios, PBXs and other equipment
- Alarm reporting to the T/Mon NOC Remote Alarm Monitoring System over an RS-232 serial line
- Alarm reporting to T/Mon NOC over a T202 modem connection

**Note:** If the serial port is configured for alarm reporting to T/Mon NOC, the port is **not** available for use as a reach-through proxy port.

For instructions on configuring the serial port, see Section 6.5.1, "DCP Channel: T/Mon NOC Alarm Reporting Options," and Section 6.5.2, "Reach-through Channel."

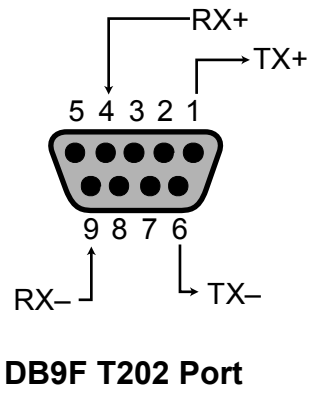
**When used as a reach-through proxy port,** the serial port has the pinout shown in Figure 4.9.2, below.




| Pin # | Signal | Description |
|---|---|---|
| 1 | NC | Not connected |
| 2 | TX | Transmit data |
| 3 | RX | Receive data |
| 4 | DSR | Data set ready |
| 5 | GND | Ground |
| 6 | NC | Not connected |
| 7 | CTS | Clear to send |
| 8 | RTS | Request to send |
| 9 | NC | Not connected |

***Fig. 4.9.2.*** *Reach-through proxy port pinout*

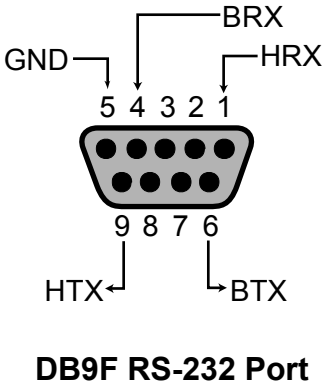
**When used as a T202 modem port (optional),** the serial port has the pinout shown in Figure 4.9.3, below.




| Pin # | Signal | Description |
|---|---|---|
| 1 | TX+ | Transmit positive |
| 2 | NC | Not connected |
| 3 | NC | Not connected |
| 4 | RX+ | Receive positive |
| 5 | NC | Not conntected |
| 6 | TX– | Transmit negative |
| 7 | NC | Not connected |
| 8 | NC | Not connected |
| 9 | RX– | Receive negative |

***Fig. 4.9.3.*** *T202 modem port pinout*

**When using a RS-232 Bridging Docking Pad (optional),** the serial port has the pinout shown in Figure 4.9.4, below.



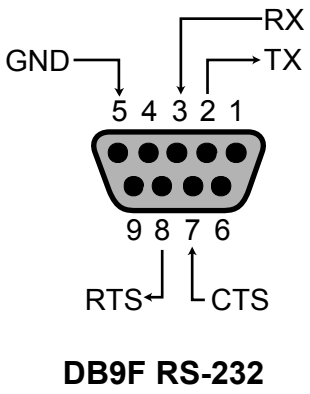

| Pin # | Signal | Description |
|---|---|---|
| 1 | HRX | Host receive data |
| 2 | NC | Not connected |
| 3 | NC | Not connected |
| 4 | BRX | Bridge receive data |
| 5 | GND | Ground |
| 6 | BTX | Bridge transmit data |
| 7 | NC | Not connected |
| 8 | NC | Not connected |
| 9 | HTX | Host transmit data |

***Fig. 4.9.4.*** *RS-232 Bridging port pinout*

# 4.11 Craft Port

***Fig. 4.10.1.*** *Craft port*

Use the front panel craft port to connect the NetGuardian 216 to a PC for onsite unit configuration. To use the craft port, connect the included DB9 download cable from your PC's COM port to the craft port. For instructions on using the included T/NG216 configuration software, see Section 5, "T/NG216 Configuration Software."




| Pin # | Signal | Description |
|---|---|---|
| 1 | NC | Not connected |
| 2 | TX | Transmit data |
| 3 | RX | Receive data |
| 4 | DSR | Data set ready |
| 5 | GND | Ground |
| 6 | NC | Not connected |
| 7 | CTS | Clear to send |
| 8 | RTS | Request to send |
| 9 | NC | Not connected |

***Fig. 4.10.2.*** *Craft port pinout*

The craft port pinout is shown in Figure 4.10.2, above.

# 5 T/NG216 Configuration Software

T/NG216, the Windows-based software utility included with your NetGuardian 216, provides a full suite of tools for unit configuration, turnup and testing.

With T/NG216, you can:

- Configure and provision the NetGuardian 216
- Read and write configuration files to NetGuardian 216 units in the field over LAN or local craft port connection
- Create and save configuration files to your local PC — this is great if you want to create a standard configuration for all your NG216 units, or if you want to create batches of configuration files for remote LAN upload
- Monitor alarm points and operate control relays for turnup and testing
- Monitor live, real-time voltage or current values from the NetGuardian 216's analog alarm inputs
- Analyze network traffic between the NetGuardian 216 and its alarm master
- Load firmware updates

To install T/NG216 on your PC, run the installer program included on the NetGuardian 216 Resource CD.

## 5.1 T/NG216 PC Requirements

To run T/NG216, DPS Telecom recommends a Windows-based PC with the following specifications:

**Operating System:** Windows 9x, NT, ME, 2000 or XP

**Processor:** 333 MHz or better

**Color Setting:** 16 bit

**Screen Resolution:** 1024 x 768

**Note:** T/NG216 may not work properly on slower machines if the display is set for 256 colors.

## 5.2 Starting T/NG216 — You MUST Read This Section

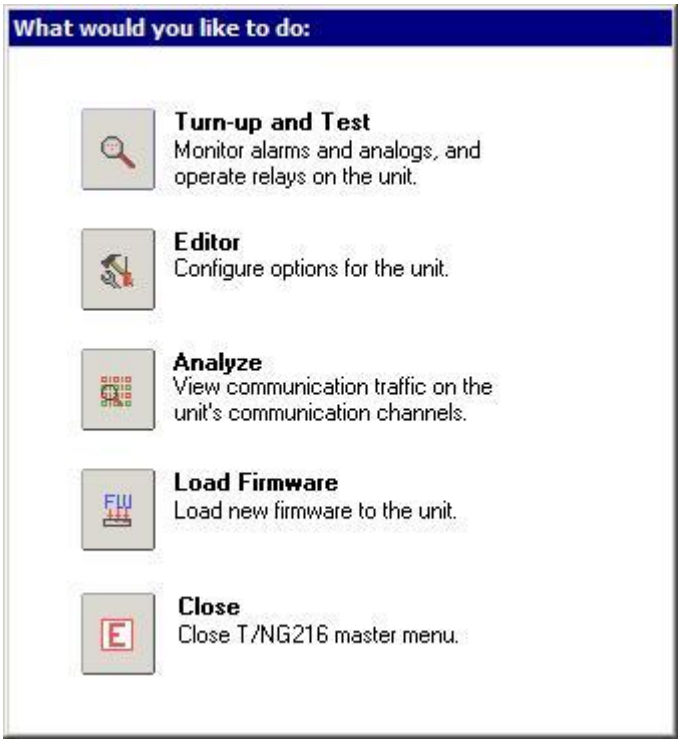

What would you like to do:
Turn-up and Test
Monitor alarms and analogs, and operate relays on the unit.
Editor
Configure options for the unit.
Analyze
View communication traffic on the unit's communication channels.
Load Firmware
Load new firmware to the unit.
Close
Close T/NG216 master menu.

***Fig. 5.2.1.*** *Select a mode … but* ***first check your communication settings***

To start T/NG216, choose its program shortcut from the Windows Start menu. When T/NG216 starts, it will first display the mode selection dialog shown in Figure 5.2.1.

Your choices are:

**Turn-up and Test:** Monitor alarms, control relays and set date and time

**Editor:** Configure options and provision NetGuardian 216 unit

**Analyze:** View NetGuardian 216 communication in hexadecimal or ASCII format

**Load Firmware:** Install firmware updates on the NetGuardian 216

**Close:** Start T/NG216 without choosing a mode

***Important!***

**If you need to change T/NG216's communication settings, click CLOSE. If you select a mode, T/NG216's communication settings are LOCKED.**

By default, a new T/NG216 installation is configured to connect to the NetGuardian 216 over a physical cable connection between your PC's Communications Port 1 (COM1) and the NG216's front panel craft port. You **CANNOT** change this setting while in Turn-up and Test, Editor, Analyze or Load Firmware Mode.

**If you are connected to the NetGuardian 216 through a COM1–to–Craft Port connection,** go ahead and select the mode you want to use. But keep in mind that T/NG216 saves communication settings between

sessions — if you ever change your communication settings, you should double-check your settings the next time you start the program.

**If you want to make a LAN connection to a remote NetGuardian 216,** or if you want to connect to the craft port using a different PC COM port, click **Close** in the mode selection dialog. Change your communication settings, and then select the mode you want. (For more information, see Section 5.4, "Connecting to the NetGuardian 216 via Craft Port" and Section 5.5, "Connecting to the NetGuardian 216 via LAN.")

## 5.3 Changing Modes in T/NG216

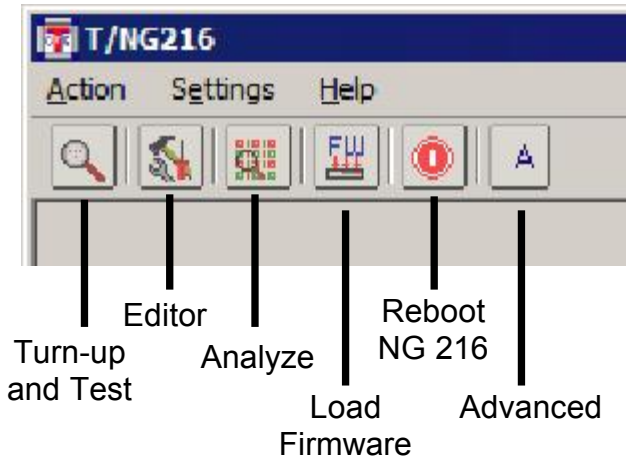



***Fig. 5.3.1.*** *Change mode buttons on the T/NG216 toolbar*

While running T/NG216 you can change modes by clicking one of the change mode buttons in the T/NG216 toolbar. (See Figure 5.3.1.) The toolbar also features a button for rebooting the connected NetGuardian 216. In most cases, you won't need to reboot the NetGuardian 216 — if the unit needs to be rebooted to put an configuration change into effect, T/NG216 will automatically reboot the unit.

If you point to a toolbar button with the mouse cursor, the button's name will appear in a tooltip by the cursor and in the status bar at the bottom of the T/NG216 window.

***Fig. 5.3.2.*** *Exit mode button*

To exit a mode, click the **Exit** button on the far right of the toolbar. (See Figure 5.3.2, above.)

***Important!***

**ALWAYS click Exit BEFORE changing communication settings. You CANNOT change communication settings while in Turn-up and Test, Editor, Analyze or Load Firmware Mode.**

It's especially important to verify your communication settings when you are connecting to remote NetGuardian 216 units over LAN. After you enter Editor Mode and start entering configuration data, you cannot change the IP address — you are locked onto the last NetGuardian 216 you connected to, and if you click the **Write to unit** button, **the new configuration will be written to the last IP address entered, overwriting your last configuration work.**

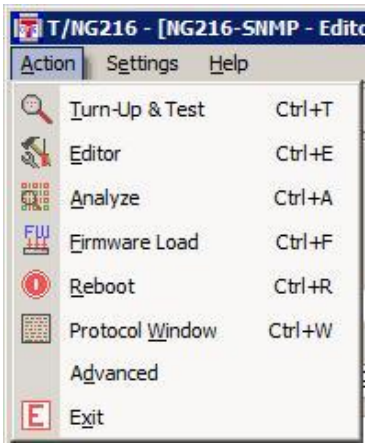



***Fig. 5.3.3.*** *Action menu*

You can also change modes by selecting a mode from the **Action** menu. (See Figure 5.3.3., above.) The **Action** menu also has a command for opening the **Protocol Window**. This is an internal DPS Telecom command that you won't need to use unless advised to by DPS Telecom Tech Support personnel.

***Important!***

The **Action** menu **Exit** command and the toolbar **Exit** button are two separate commands. The **Action** menu **Exit** command **quits the T/NG216 program.** The toolbar **Exit** button just exits the currently active mode. If you just want to change your communication settings, click the **Exit** button.

## 5.4 Connecting to the NetGuardian 216 via Craft Port

***Fig. 5.4.1.*** *Craft port*

The simplest way to connect to the NetGuardian 216 is over a physical cable connection between your PC's Communications Port 1 (COM1) and the NG216's front panel craft port.

Use the included DB9 download cable to connect your PC's COM port to the NetGuardian 216 craft port. (For the pinout of the craft port, see Section 4.10, "Craft Port.")

To connect over the craft port, just start T/NG216 and choose the mode you want to use. (See Section 5.2, "Starting T/NG216.")

***Fig. 5.4.2.*** *Communications error message*

If T/NG216 can't connect to the NetGuardian 216, the program will display the error message shown in Figure 5.4.2, above. Make sure that the NetGuardian 216 unit is powered and double-check the cable connection.

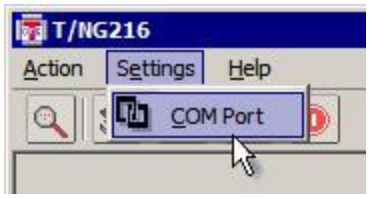



***Fig. 5.4.3.*** *Use the* ***COM Port*** *command on the* ***Settings*** *menu to switch to a different COM port*

If you want to connect to the NetGuardian 216 over a LAN connection or a different COM port, click the **COM Port** command on the **Settings** menu. (See Figure 5.4.3.) This opens the **Communication Mode** dialog box. (See Figure 5.4.4.)

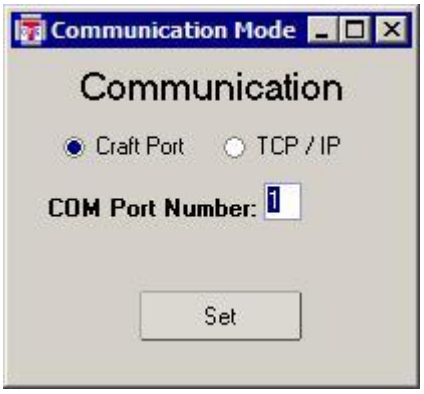



***Fig. 5.4.3.*** *Enter a different COM port number here*

Click **Craft Port** and enter a new number in the **COM Port Number** box.

**Note:** T/NG216 saves communication settings between sessions, so when you next start T/NG216, the program will be configured to use the last communication settings used.

***Important!***

**You CANNOT change T/NG216's communication settings while in Turn-up and Test, Editor, Analyze or**

**Load Firmware Mode. Before changing communication settings, click EXIT on the T/NG216 Toolbar.**

When T/NG216 is in Turn-up and Test, Editor, Analyze or Load Firmware Mode, the program's communication settings are **LOCKED** and cannot be changed. While T/NG216 is any of these modes, the program will read from and write to the NetGuardian 216 unit that is connected over the last communications channel used.

If you always use a craft port connection, this isn't a problem, since you'll make a new physical cable connection every time you connect to a different NG216 unit. Just keep T/NG216 configured to use your preferred COM port (probably the default setting, COM1). Keep in mind that T/NG216 saves communication settings between sessions, so if you change your communication settings, double-check your settings the next time you start the program.

**For important information about LAN connections, see Section 5.5, "Connecting to the NetGuardian 216 via LAN."**

**To close a mode and change communication settings, always click EXIT button on the TOOLBAR.** If you choose the **Exit** command from the **Action** menu, **you will quit the T/NG216 program.** For more information, see Section 5.3, "Changing Modes in T/NG216."

## 5.5 Connecting to the NetGuardian 216 via LAN

You can also use T/NG216 to remotely connect to NetGuardian 216 units in the field over LAN. This is a very convenient way to provision a series of NetGuardian units, especially if you're working from a standardized configuration file.

**[WARNING: When working with NetGuardian 216s over LAN, be very careful that you're connected to the correct unit BEFORE writing a configuration to unit memory. See important warnings at the end of this section.]**

Before you can make a remote LAN connection to the NetGuardian 216, you need to assign the NetGuardian 216 an IP address on your network. (If you're not sure what IP address to assign, check with your network administrator.)

In order to assign the NetGuardian 216 an IP address, you have to establish a temporary connection to the unit. There are two ways to make a temporary connection to the NetGuardian 216:

**The Easy Way:** If you have physical access to the NetGuardian 216, the easiest thing to do is connect to the unit through the craft port and then assign it an IP address. After you've done that, you can complete the rest of the unit configuration over a remote LAN connection, if you want. For instructions, see Section 5.5.1, "Assigning an IP Address via Craft Port."

**The Slightly More Complicated Way:** If you DON'T have physical access to the NetGuardian, you can connect to the NetGuardian 216 over a temporary LAN connection. You can create a temporary connection by temporarily changing the IP address and subnet mask **of your PC** to match the factory-default settings of the NetGuardian 216. For instructions, see Section 5.5.2, "Assigning an IP Address via Temporary LAN Connection."

**Once you have assigned an IP address to the NetGuardian 216, follow these steps to make a remote LAN connection to the unit:**

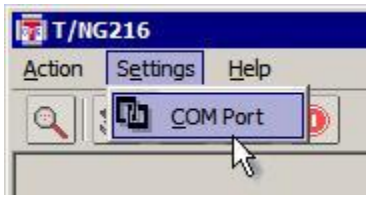



***Fig. 5.5.1.*** *Use the COM Port command on the Settings menu to select a LAN connection*

1. Start T/NG216. Click **Close** in the mode selection dialog box. (See Section 5.2, "Starting T/NG216.")
2. Choose **COM Port** from the **Settings** menu to open the **Communication Mode** dialog box. (See Figure 5.5.1, above.)

***Fig. 5.5.2.*** *Enter the NetGuardian 216's IP address here*

3. In the Communications Mode dialog box, click **TCP/IP**. Type the NetGuardian 216's IP address in the **IP Address** box. The NetGuardian 216 always connects over LAN using Port 2002, so the **Port** box cannot be changed.

***Fig. 5.5.3.*** *Communications error message*

4. To verify the connection, switch to Turn-up and Test Mode, or switch to Editor Mode and click the **Read from Unit** button. (For information about switching modes, see Section 5.3.) If T/NG216 can't connect to the NetGuardian 216, the program will display the error message shown in Figure 5.4.2.4, above. If possible, make sure that the NetGuardian unit is powered and connected to the network. Check to make sure there are no firewalls or port-blocking routers between your PC and the NetGuardian 216.

**Note:** T/NG216 saves communication settings between sessions, so when you next start T/NG216, the program will be configured with the last communications settings used.

***Important!***

**You CANNOT change T/NG216's communication settings while in Turn-up and Test, Editor, Analyze or**

**Load Firmware Mode. Before changing communication settings, click EXIT on the T/NG216 Toolbar.**

When T/NG216 is in Turn-up and Test, Editor, Analyze or Load Firmware Mode, the program's communication settings are **LOCKED** and cannot be changed. While T/NG216 is any of these modes, the program will read from and write to the NetGuardian 216 unit that was connected over the last communications channel used.

**When connecting to NetGuardian 216 units through a LAN connection, you MUST select the unit's IP address BEFORE you make any configuration changes. ALWAYS** check the IP address **BEFORE** connecting to a NG216 unit via LAN. Once you enter Editor Mode and start entering configuration data, you **CANNOT** change the IP address — if you click the **Write to unit** button, **the new configuration will be written to the last IP address entered, overwriting your last configuration work.**

**To close a mode and change communication settings, always click EXIT on the TOOLBAR.** If you choose the **Exit** command from the **Action** menu, T/NG216 will quit. For more information, see Section 5.3, "Changing Modes in T/NG216."

## 5.5.1 Assigning an IP Address via Craft Port

Follow these steps to configure the NetGuardian over a craft port connection:

1. Connect your PC to the NetGuardian 216's craft port and start T/NG216. (For instructions, see Section 5.4, "Connecting to the NetGuardian 216 via Craft Port.")
2. Click Editor in the mode selection dialog box. (See Section 5.2, "Starting T/NG216.")

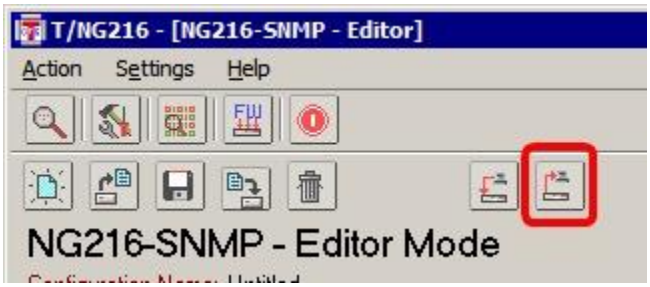



***Fig. 5.5.1.1.*** *Read from Unit Button*

3. Click the **Read from Unit** button on the **Editor Mode** toolbar to download the current unit configuration from the NetGuardian 216 unit. This is an important double check to make sure you know what unit you're working with and what settings you're changing.
4. T/NG216 will prompt you to enter a password. If you haven't assigned the NetGuardian a password, use the default password, dpstelecom. (Passwords are case-sensitive; the default password is all lower-case.)
5. There will be a brief pause as T/NG216 downloads the configuration file.

***Fig. 5.5.1.2.*** *Enter the NetGuardian 216's IP address here*

6. Click the **Device** tab. In the **Ethernet Port** area, enter the NetGuardian 216 unit's assigned IP address, subnet mask and gateway. (See Figure 5.5.1.2, above.)
7. You need to enter a confirmation password to write the new configuration to NVRAM. Type the password in the **Confirm** box in the **NG216 Options** area. (See Figure 5.4.1.2.) For new units you can use the default password: dpstelecom**.**

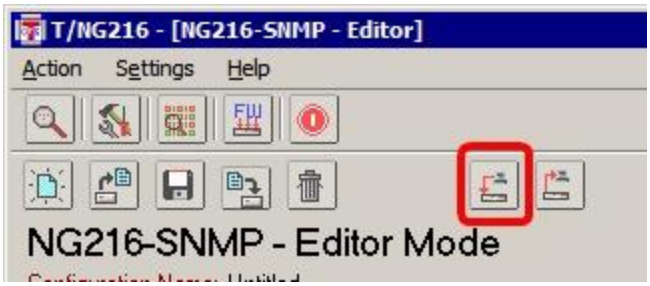



***Fig. 5.5.1.3.*** *Write to Unit Button*

8. Click the **Write to Unit** button (see Figure 5.5.1.3., above) to write the new configuration to the NetGuardian 216's NVRAM.

You can now connect to the NetGuardian 216 over LAN, using the IP address you assigned. For instructions on connecting over LAN, see Section 5.5, "Connecting to the NetGuardian 216 via LAN."

## 5.5.2 Assigning an IP Address via Temporary LAN Connection

Follow these steps to configure the NetGuardian over a temporary LAN connection:

1. Look up your PC's current IP address and subnet mask, and write this information down.
2. Reset your PC's IP address to **192.168.1.200.**
3. Reset your PC's subnet mask to **255.255.0.0.** You may have to reboot your PC to apply your changes.
4. Start T/NG216.
5. Click Close in the mode selection dialog box. (See Section 5.2, "Starting T/NG216.")

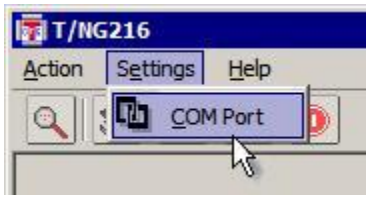



***Fig. 5.5.2.1.*** *Use the COM Port command on the Settings menu to connect to the NetGuardian 216's default IP address*

6. Chose **COM Port** from the **Settings** menu to open the **Communications Mode** dialog box.

***Fig. 5.4.2.2.*** *Enter the NG216's **default** IP address — **192.168.1.100** — here*

7. In the Communications Mode dialog box, click **TCP/IP**. Type **192.168.1.100** (this is the NetGuardian's factory-default IP address) in the **IP Address** box and click **Set**. The NetGuardian 216 always connects over LAN using Port 2002, so the **Port** box cannot be changed.

8. Switch to Editor Mode. (Choose **Editor** from the **Action** menu, press Ctrl+E, or click the **Editor** button in the toolbar — for details, see Section 5.3, "Changing Modes in T/NG216.")

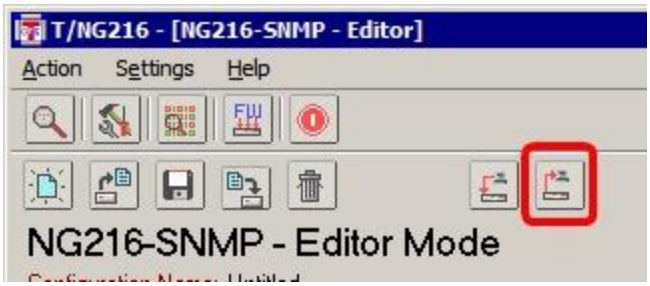



***Fig. 5.5.2.3.*** *Read from Unit Button*

9. Click the **Read from Unit** button on the **Editor Mode** toolbar to download the current unit configuration from the NetGuardian 216 unit. This is an important double check to make sure you know what unit you're working with and what settings you're changing.

10. T/NG216 will prompt you to enter a password. If you haven't assigned the NetGuardian a password, use the default password, dpstelecom. (Passwords are case-sensitive; the default password is all lower-case.)

***Fig. 5.5.2.4.*** *Communications error message*

11. If T/NG216 can't connect to the NetGuardian 216, the program will display the error message shown in Figure 5.5.2.4, above. If possible, make sure that the NetGuardian unit is powered and connected to the network.
12. If the connection is successful, there will be a brief pause as T/NG216 downloads the configuration file.

***Fig. 5.5.2.5.*** *Enter the NetGuardian 216's* ***permanent*** *IP address here*

13. Click the **Device** tab. In the **Ethernet Port** area, enter the NetGuardian 216 unit's assigned IP address, subnet mask and gateway. (See Figure 5.5.2.3, above.)
14. You need to enter a confirmation password to write the new configuration to NVRAM. Type the password in the **Confirm** box in the NG216 Options area. (See Figure 5.5.2.3.) For new units you can use the default password: dpstelecom.

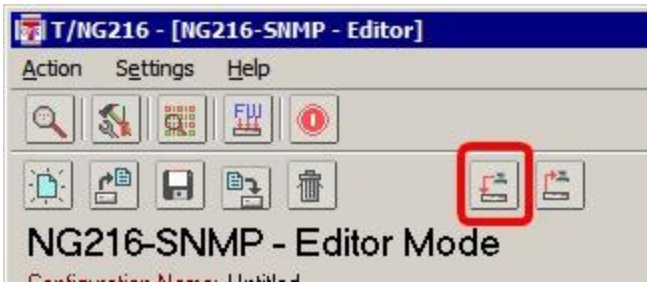



***Fig. 5.5.2.6.*** *Write to Unit Button*

15. Click the **Write to Unit** button (see Figure 5.5.2.4., above) to write the new configuration to the NetGuardian 216's NVRAM.
16. Change your PC's IP address and subnet mask back to their original settings.

You can now connect to the NetGuardian 216 over LAN, using the IP address you assigned. For instructions on connecting over LAN, see Section 5.5, "Connecting to the NetGuardian 216 via LAN."

# 6 Configuration

## 6.1 T/NG216 Editor Mode

Open Saved Configuration File
Save As
Write Configuration File to NG216 NVRAM
Exit
Save Configuration File to PC Disk
Read Configuration from NG216 NVRAM
Exit Editor Mode
Create New Configuration File
Delete Configuration File from PC Disk

***Fig. 6.1.1.*** *Editor Mode toolbar*

T/NG216's **Editor** Mode provides complete tools for configuring the T/NG216. With Editor Mode, you can define NG216 configuration settings, read and write configurations to the NG216's NVRAM memory, and save NG216 configuration files on disk.

Configuration settings are defined in the several tabs in the T/NG216 Editor window. Each tab is described in detail in the following sections.

The Editor Mode toolbar (Figure 6.1.1, above), provides commands for working with NG216 configuration files. If you point to a toolbar button with the mouse cursor, the button's name will appear in a tooltip by the cursor and in the status bar at the bottom of the T/NG216 window.

## 6.2 Reading and Writing Configuration Files on PC Disk

NetGuardian 216 configurations can be saved to and loaded from a floppy or PC hard disk or network drive. Working with saved configuration files is a very convenient way to configure multiple NetGuardian 216 units — you can define a basic configuration for all your units, save it on disk, and use it (with appropriate changes) for all of your individual units.

Commands for working with configuration files on your PC are located on the left side of the Editor Mode toolbar (see Figure 6.1.1). The available commands are:

**New:** Create a new, blank configuration. (**Note:** This will clear all T/NG216 configuration settings; you will be prompted to save the current configuration.)

**Open:** Load an existing saved configuration file from disk.

**Save:** Save current configuration.

**Save As:** Save current configuration as a new file.

**Delete:** Delete a saved configuration file.

## 6.3 Reading and Writing Configuration Files to NetGuardian 216 NVRAM

The Editor Mode toolbar also provides tools for reading and writing configurations to the NetGuardian 216's NVRAM memory. The **Write to unit** and **Read from unit** buttons are located in the center of the toolbar (see Figure 6.1.1).

DOD
It's a good idea to always load the existing configuration from unit NVRAM **before** defining configuration options. This is an important double check to make sure you know what unit you're working with and what settings you're changing.

Changes to the NetGuardian configuration **DO NOT** take effect until you click the **Write to unit** button and reboot the unit. The **Write to unit** command writes **all current T/NG16 configuration settings** to the NetGuardian 216's NVRAM, **erasing all previous settings**.

After writing the configuration to NG216 NVRAM, T/NG216 will automatically reboot the NG216 unit.

# 6.4 Device Tab: General NG216 Options

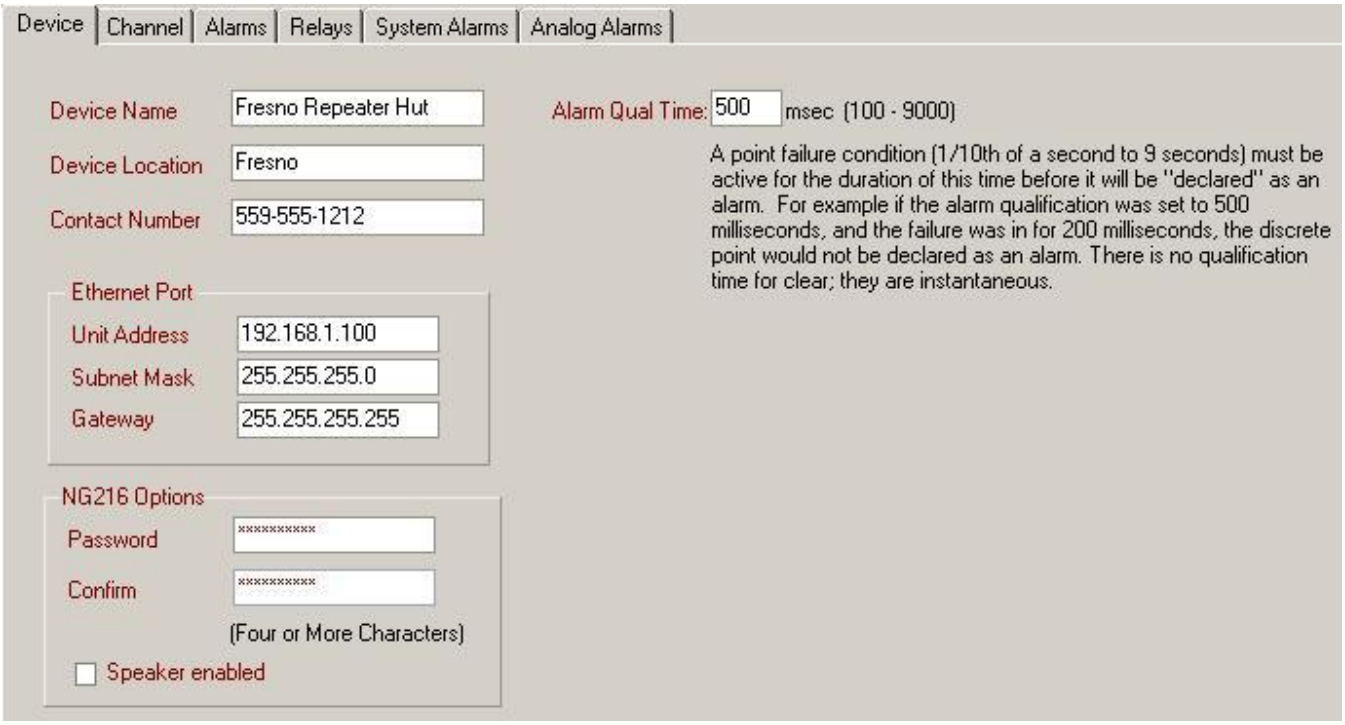

Device
Channel
Alarms
Relays
System Alarms
Analog Alarms
Device Name
Fresno Repeater Hut
Device Location
Fresno
Contact Number
559-555-1212
Alarm Qual Time:
500
msec (100 - 9000)
A point failure condition (1/10th of a second to 9 seconds) must be active for the duration of this time before it will be "declared" as an alarm. For example if the alarm qualification was set to 500 milliseconds, and the failure was in for 200 milliseconds, the discrete point would not be declared as an alarm. There is no qualification time for clear; they are instantaneous.
Ethernet Port
Unit Address
192.168.1.100
Subnet Mask
255.255.255.0
Gateway
255.255.255.255
NG216 Options
Password
Confirm
(Four or More Characters)
Speaker enabled

***Fig. 6.4.1*** *The Device tab provides general configuration options*

The **Device** tab (Figure 6.4.1) provides options for basic NetGuardian 216 setup:

**Device Name**: Assign the NetGuardian 216 a name of your choice. For easy identification, it's a good idea to assign a name that will be meaningful to everyone who uses the NetGuardian 216.

**Device Location**: Type in the physical location of the NetGuardian 216. This is very useful for keeping track of different units.

**Contact Number**: Type in a phone number or email address for the person responsible for the site.

**Alarm Qual Time**: This is a great tool for controlling nuisance alarms. If an alarm point fluctuates in and out, you can set a minimum duration that a point must be activated before the NetGuardian 216 reports an alarm. Enter alarm qualification time in milliseconds. The available range is 100–9000 milliseconds, or 0.1–9 seconds. **The Alarm Qual Time setting affects all 16 discrete alarm points.**

## 6.4.1 Ethernet Port Options

The **Ethernet Port** area provides options for configuring the NetGuardian 216's IP address:

**Unit Address**: Type in the NetGuardian 216's assigned IP address on your network. (For step-by-step instructions, see Section 5.4.1, "Assigning an IP Address via Craft Port," and Section 5.4.2, "Assigning an IP Address via LAN.")

**Subnet Mask**: Type in the NG216's assigned subnet mask. A subnet mask controls whether IP data packets transmitted between the NetGuardian 216 and its alarm master stay within the local network or are forwarded somewhere else on a wide area network. If you're not sure whether you should assign a subnet mask, check with your network administrator.

**Default Gateway**: You only need to enter a default gateway if the NetGuardian 216 is connected to a wide area network. If you're not sure whether to assign a default gateway, check with your network administrator. If you're not connected to a WAN, keep the default value, **255.255.255.255**.

## 6.4.2 NG216 Options: Password and Alarm Speaker

The **NG216 Options** area provides options for configuring the NetGuardian 216's security password and audible notification:

**Password:** This box displays the NetGuardian 216's current security password in asterisks. You need to enter a password when you connect to the NetGuardian 216 to read or write configurations, monitor in Turn-up and Test Mode, or monitor communications in Analyze Mode. The **Password** box is automatically filled with the current password when the NG216's configuration is loaded into T/NG216 from NVRAM. Passwords are case sensitive and must be at least four-characters long. The default password is dpstelecom — note that that is all lower-case — but you'll obviously want to change the default to a password you choose.

**Confirm:** As a security check, you need to enter the password in this box before you can write a configuration to the NetGuardian 216's NVRAM. If you don't type in the password, T/NG216 will prompt you to enter it before continuing. Click the **Device** tab and enter the password in the **Confirm** box.

**To change the password,** type the new password in the **Password** box and re-type it in the **Confirm** box. Then click the **Write to unit** button. T/NG216 will prompt you to type the **old** password before continuing.

**Speaker Enabled**: Checking this box enables the NetGuardian 216's alarm speaker, which will beep to announce new alarms. **Note:** The alarm speaker is automatically disabled if the DCP Channel (T/Mon NOC reporting channel) is turned off.

# 6.5 Channel Tab: Alarm Reporting Options

The **Channel** tab provides options for configuring alarm reporting to SNMP managers and T/Mon NOC and options for configuring a reach-through proxy channel:

## 6.5.1 DCP Channel: T/Mon NOC Alarm Reporting Options

The **DCP Channel** options configure how the NetGuardian 216 reports alarms to the DPS Telecom T/Mon NOC Remote Alarm Monitoring System. Your T/Mon NOC alarm reporting options are slightly different, depending on whether you select alarm reporting over LAN or over a serial connection.

### 6.5.1.1 Reporting to T/Mon NOC via LAN

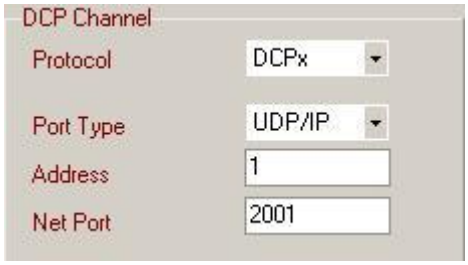



***Fig. 6.5.1.1.1*** *DCP Channel options (when alarm reporting over LAN is selected)*

Reporting over LAN is very simple to set up; most users can accept the defaults without changing a thing. DCP over LAN options are shown in Figure 6.5.1.1.1, above. Your choices are:

**Protocol:** Choose from OF**F, DCPx, DCPf, DCP** or **DCP1**. In most cases, the best choice is to keep the default setting, which is **DCPx**. Choosing **OFF** from this menu turns off alarm reporting to T/Mon NOC.

**Note:** Turning off T/Mon NOC alarm monitoring also disables the alarm speaker.

**Port Type:** Choose from **SERIAL, T202, UDP/IP** or **TCP/IP**. Choosing **SERIAL** or **T202** from this menu gives you slightly different options; see Section 6.5.1.2 "Reporting to T/Mon NOC via Serial or T202 Connection."

**Note**: The **Serial** and **T202** options are functionally the same, with the exception that the **T202** option logically inverts the RTS signal, which may be necessary in other types of serial communications besides **T202**.

**Address:** This box assigns the NetGuardian 216 an ID in T/Mon NOC's Port–Address–Display–Alarm Point addressing system. Each NetGuardian 216 unit must have a unique address that matches the address databased for it on T/Mon NOC.

**Net Port:** This box displays the UDP/IP or TCP/IP port the NetGuardian 216 uses to communicate with T/Mon NOC. You don't need to change this setting unless your network administrator wants you to use a different port or if DPS Telecom Tech Support personnel advise you to change the setting.

### 6.5.1.2 Reporting to T/Mon NOC via Serial or T202 Modem Connection

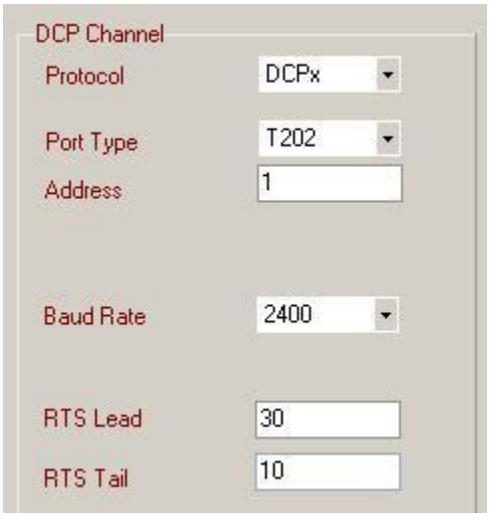



***Fig. 6.5.1.2.1*** *DCP Channel options (when alarm reporting over T202 modem connection is selected)*

DCP over serial and T202 modem connection options are shown in Figure 6.5.1.2.1, above. Your choices are:

**Protocol:** Choose from OF**F, DCPx, DCPf, DCP** or **DCP1**. In most cases, the best choice is to keep the default setting, which is **DCPx**. Choosing **OFF** from this menu turns off alarm reporting to T/Mon NOC.

**Note:** Turning off T/Mon NOC alarm monitoring also disables the alarm speaker.

**Port Type:** Choose from **SERIAL, T202, UDP/IP** or **TCP/IP**. Choosing **UDP/IP** or **TCP/IP** from this menu gives you slightly different options; see Section 6.5.1.1 "Reporting to T/Mon NOC via LAN."

**Note**: The **Serial** and **T202** options are functionally the same, with the exception that the **T202** option logically inverts the RTS signal, which may be necessary in other types of serial communications besides **T202**.

**Baud Rate:** Choose from **1200, 2400, 4800** or **9600** baud.

**For T202 modem connections,** the **Baud Rate** must be either **1200** or **2400** baud.

**RTS Lead:** Time carrier is turned on before data is sent, in milliseconds. Available range is 0–255 msec.

**RTS Tail:** Time carrier stays on after data is sent, in milliseconds. Available range is 0–255 msec.

**For RS-232 connections,** both **RTS Lead** and **RTS Tail** should be kept at their factory default setting, which is **zero (0)**.

**For T202 modem connections,** both **RTS Lead** and **RTS Tail** must be set **above zero.** If you select **T202** in the **Port Type** menu, **RTS Lead** will default to **30 msec**, and **RTS Tail** will default to **10 msec,** as shown in Figure 6.5.1.2.1.

## 6.5.2 Reach-through Channel

***Fig. 6.5.2.1.*** *Reach-through channel, turned off (left) and on (right)*

The **Reach-through Channel** options configure how the back panel serial port is used.

**Note:** Reach-through Channel options are not available if the DCP Channel (T/Mon NOC alarm reporting channel) is set for serial connection.

To turn on the Reach-through Channel, type the TCP/IP port number you want to use in the **Reach-through Port** box. (See Figure 6.2.5.1, above.) If you type zero in the box, the Reach-through Channel is turned off.

When the Reach-through Channel is turned on, your options are:

**Reach-through Port:** TCP/IP or UDP/IP port remote users will use to communicate with connected devices.

**Reach-through Type:** Choose between **UDP/IP** and **TCP/IP**.

**Baud Rate:** Choose from **1200, 2400, 4800** or **9600** baud.

**RTS Lead:** Time carrier is turned on before data is sent, in milliseconds. Available range is 0–255 milliseconds.

**RTS Tail:** Time carrier stays on after data is sent, in milliseconds. Available range is 0–255 milliseconds.

**Note:** For RS-232 connections, both **RTS Lead** and **RTS Tail** should be kept at their factory default setting, which is zero (0).

## 6.5.3 Alarm Channel: SNMP Alarm Reporting Options

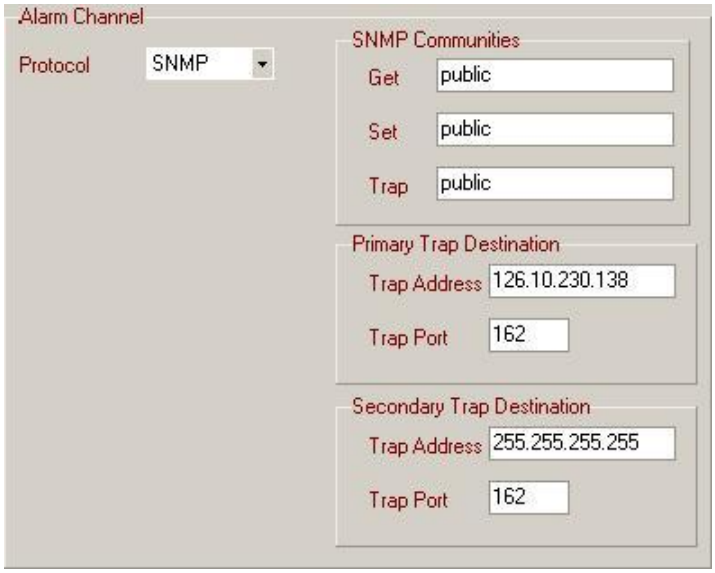



***Fig. 6.5.3.1.*** *Alarm Channel (SNMP alarm reporting) options*

The **Alarm Channel** options configure how the NetGuardian 216 reports alarms to SNMP managers. Your choices are:

**Protocol:** Choose between **OFF** and **SNMP**. Choosing **OFF** from this menu turns off SNMP alarm reporting.

**SNMP Communities:**

**Get:** Community string for SNMP Get requests.

**Set:** Community string for SNMP Set requests.

**Trap:** Community string for SNMP Traps.

**Note:** Make sure that your community strings match those used by the SNMP manager. Community strings are security passwords; if the strings do not match, the SNMP manager will not accept Traps from the NetGuardian 216. Community strings are case sensitive.

**Primary Trap Destination:**

**Trap Address:** IP address of the primary SNMP manager.

**Trap Port:** UDP/IP port the primary SNMP manager uses to receive Traps. In most cases, you should keep the default setting, which is **162**.

**Secondary Trap Destination:**

**Trap Address:** IP address of the secondary SNMP manager. If the is no secondary SNMP manager, keep the default setting, **255.255.255.255**.

**Trap Port:** UDP/IP port the primary SNMP manager uses to receive Traps. In most cases, you should keep the default setting, which is **162**.

## 6.6 Alarms Tab: Alarm Descriptions, Polarity and Trap Options

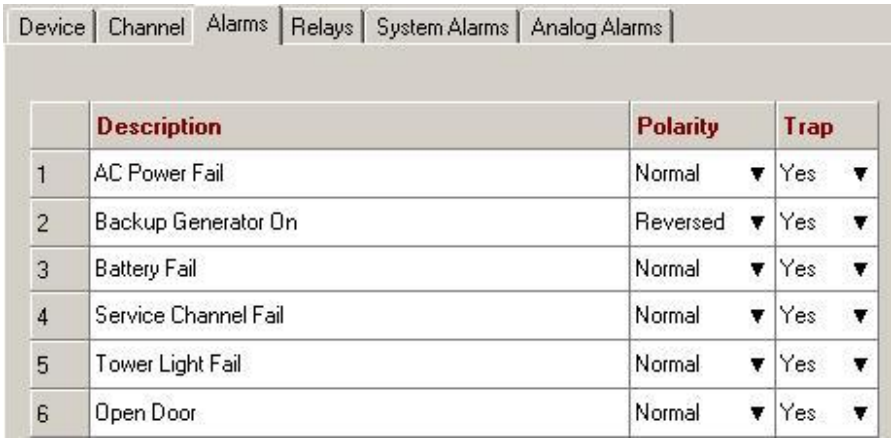



***Fig. 6.6.1.*** *The Alarms tab configures discrete alarm inputs*

The **Alarms** tab (Figure 6.6.1) provides options for configuring the NetGuardian's 16 discrete alarm inputs. Your choices, for each alarm point, are:

**Description:** Type a description of the alarm's function.

**Polarity:** Choose between **Normal** (normally open operation) and **Reversed** (normally closed operation).

**Trap:** Controls whether the NetGuardian 216 sends an SNMP Trap to the SNMP manager when this alarm is activated. Choose between **Yes** or **No**.

**Note:** Trap option is not available if Alarm Channel (SNMP alarm reporting channel) is turned off. For more information, see Section 6.5.3, "Alarm Channel: SNMP Alarm Reporting Options."

## 6.7 Relays Tab: Control Relay Options

***Fig. 6.7.1.*** *The Relays tab configures control relays*

The **Relays** tab (Figure 6.7.1) provides options for configuring the NetGuardian's two control relays. Your choices, for each control relay, are:

**Description:** Type a description of the control's function.

**Trap:** Controls whether the NetGuardian 216 sends an SNMP Trap to the SNMP manager when this control relay is activated. Choose between **Yes** or **No**.

**Note:** Trap option is not available if Alarm Channel (SNMP alarm reporting channel) is turned off. For more information, see Section 6.5.3, "Alarm Channel: SNMP Alarm Reporting

Options."

## 6.8 System Alarms Tab

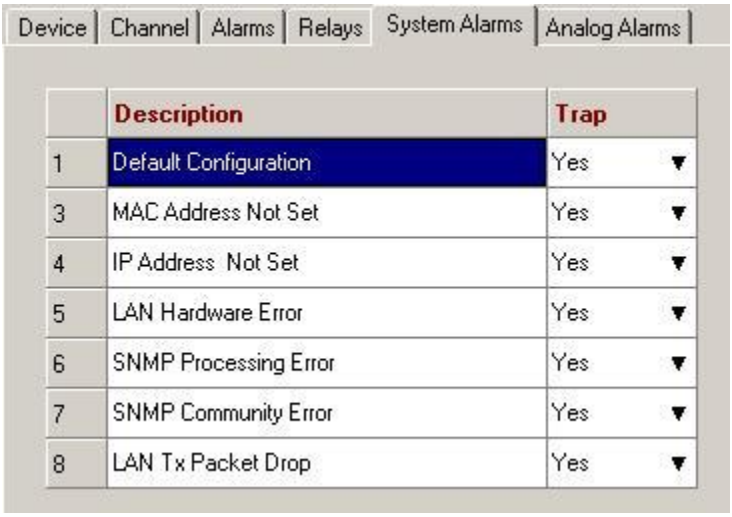



***Fig. 6.8.1.*** *The System Alarms tab displays internal housekeeping alarms*

The **System Alarms** tab (Figure 6.8.1) displays alarm descriptions for the NetGuardian 216's 7 internal housekeeping alarms. The only System Alarms option you can set is to choose whether the NetGuardian 216 will send an SNMP Trap when a system alarm is activated. This option is not available when the Alarm Channel is turned off.

The NetGuardian 216's System Alarms are:

**Default Configuration:** Configuration file loaded on the NetGuardian 216 unit is invalid and the unit has reverted to the factory-default configuration. The unit must be reprovisioned with a new configuration.

**MAC Address Not Set:** Internal hardware error. Contact DPS Telecom Tech Support at **(559) 454-1600** for assistance.

**IP Address Not Set:** NetGuardian 216 unit has not been provisioned with an IP address.

**SNMP Processing Error:** SNMP OID not recognized or SNMP request invalid. Contact DPS Telecom Tech Support at **(559) 454-1600** for assistance.

**SNMP Community Error:** The SNMP community strings provisioned on the NetGuardian 216 do not match the SNMP manager's community strings. Double-check **Alarm Channel** settings on the **Channel** tab.

**LAN Tx Packet Drop:** LAN transmission error. An occasional packet drop is normal, but if the NetGuardian 216 reports a steady series of packet drops, check to make sure the NG216 is connected to the LAN. If you're not using the NetGuardian 216 LAN connection, set IP address to 255.255.255.255.

# 6.9 Analog Alarms Tab

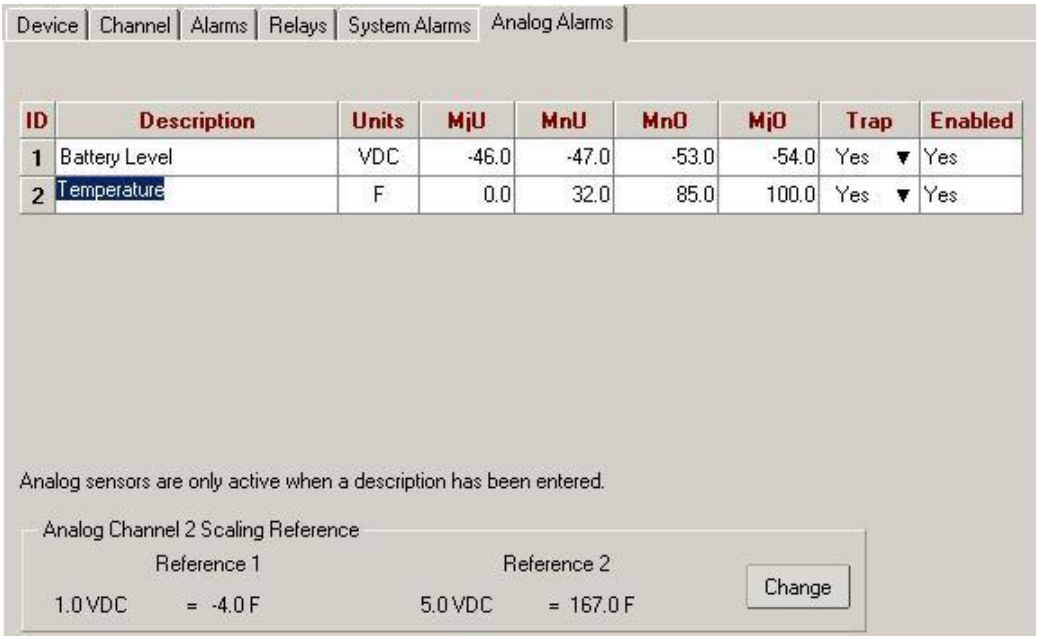



***Fig. 6.9.1*** *The Analog Alarms tab configures the NetGuardian 216's analog alarm inputs*

The **Analog Alarms** tab (Figure 6.9.1) configures the NetGuardian 216's 2 analog alarm inputs. Your choices, for each analog input, are:

**Description:** Type a description of the analog input's function. You must type a description in this box to enable the analog input. When a description is entered, the display in the **Enabled** box will switch from **No** to **Yes**. To disable the analog input, delete the description.

**Units:** Type a three-character abbreviation to indicate the display units measured by the analog input — for example, "F" for degrees Fahrenheit or "RH" for relative humidity.

**Note:** The analog inputs natively measure voltage on a range of –90 to +90 VDC. To display other units correctly, the NetGuardian 216 must be provisioned with a scaling reference to map display unit values to voltage. Entering any display unit other than "VDC" in the **Units** box automatically opens the **Analog Channel Scaling Reference** tool, where you can enter reference values to scale the unit display. The current scaling references for the selected analog input are displayed at the bottom of the **Analog Alarms** tab (see Figure 6.9.1, above.) For instructions on using the **Analog Channel Scaling Reference** tool, see Section 6.9.1, "Analog Channel Scaling Reference Tool."

**Note:** You can switch the analog inputs to measure current by resetting jumpers on the NetGuardian 216's circuit board. For instructions, see Section 4.8, "Switching Analog Alarms to Current Operation."

**MjU, MnU, MnO, MjO:** Type in values for **Major Under (MjU), Minor Under (MnU), Minor Over (MnO)** and **Major Over (MjO)** threshold alarms. Threshold values can be entered in either ascending or descending order for different units. For example, in Figure 6.9.1, the Battery Level input is set in descending order, from a Major

Under of –46 volts (undercharged) to a Major Over of –54 volts (overcharged). The Temperature input is set in ascending order, from a Major Under of 0° F to a Major Over of 100° F. Whether threshold values are in ascending or descending order, they must be continuous range from lowest to highest or highest to lowest.

**Trap:** Controls whether the NetGuardian 216 sends an SNMP Trap to the SNMP manager when an analog alarm threshold is crossed. Choose between **Yes** or **No**.

**Note:** Trap option is not available if Alarm Channel (SNMP alarm reporting channel) is turned off. For more information, see Section 6.5.3, "Alarm Channel: SNMP Alarm Reporting Options."

**Enabled:** Displays **Yes** or **No** to indicate if the analog input is enabled. To enable the analog input, type a description in the **Description** box. To disable the analog input, delete the description.

## 6.9.1 Analog Channel Scaling Reference Tool

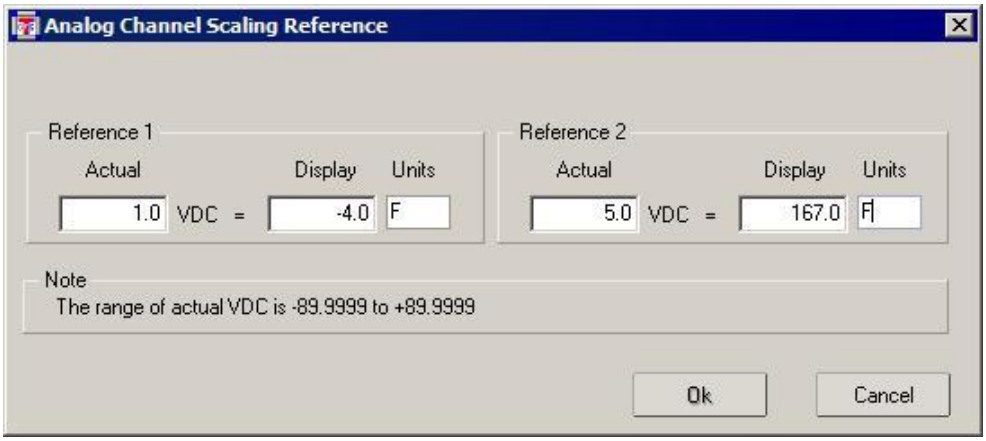



***Fig. 6.9.1.1.*** *Analog Scaling Reference Tool*

The NetGuardian 216's analog inputs natively measure voltage on a range of –90 to +90 VDC. To display other units correctly, the NetGuardian 216 must be provisioned with a scaling reference to map display unit values to voltage.

The **Analog Channel Scaling Reference** tool (Figure 6.9.1.1) configures the reference scale for the selected analog input. To open the **Analog Channel Scaling Reference** tool, enter a unit abbreviation in the **Units** box of the **Analog Alarms** tab or click the **Change** button on the **Analog Alarms** tab.

To define a reference scale, enter a display unit and a corresponding voltage for the minimum and maximum range of the analog sensor.

For example, the scaling reference shown in Figure 6.9.1.1, above, shows the configuration for an analog alarm input that is connected to a temperature sensor. The lowest temperature the sensor can measure is –4° F, at which point the sensor outputs 1.0 VDC. The highest temperature the sensor can measure is 167° F, at which point the sensor outputs 5.0 VDC. Given these minimum and maximum values, the NetGuardian 216 can calculate the corresponding display unit for any analog value it detects.

To find out the minimum and maximum range of your analog sensors, check the manufacturers' documentation.

**Analog Channel Scaling for Current Inputs**
You can switch the NetGuardian 216's analog inputs to measure current by resetting jumpers on the NetGuardian 216's circuit board. For instructions, see Section 4.8, "Switching Analog Alarms to Current Operation."

Switching to current operation involves inserting a 250-ohm shunt resistor across the analog alarm input. You need to take this into account when defining the analog reference scale.

Use Ohm's Law (V=IR) to calculate the voltage drop across the 250-ohm shunt resistor.

For example, let's say you have a sensor whose minimum-maximum output range is 5 mA–15mA.

**The sensor's minimum voltage reference** would be 1.25 VDC (0.005 amps x 250 ohms).

**The sensor's maximum voltage reference** would be 3.75 VDC (0.015 amps x 250 ohms).

Enter these **voltage** values into the **Analog Channel Scaling Reference** tool to calculate the reference scale.

# 7 Turn-up and Test Mode

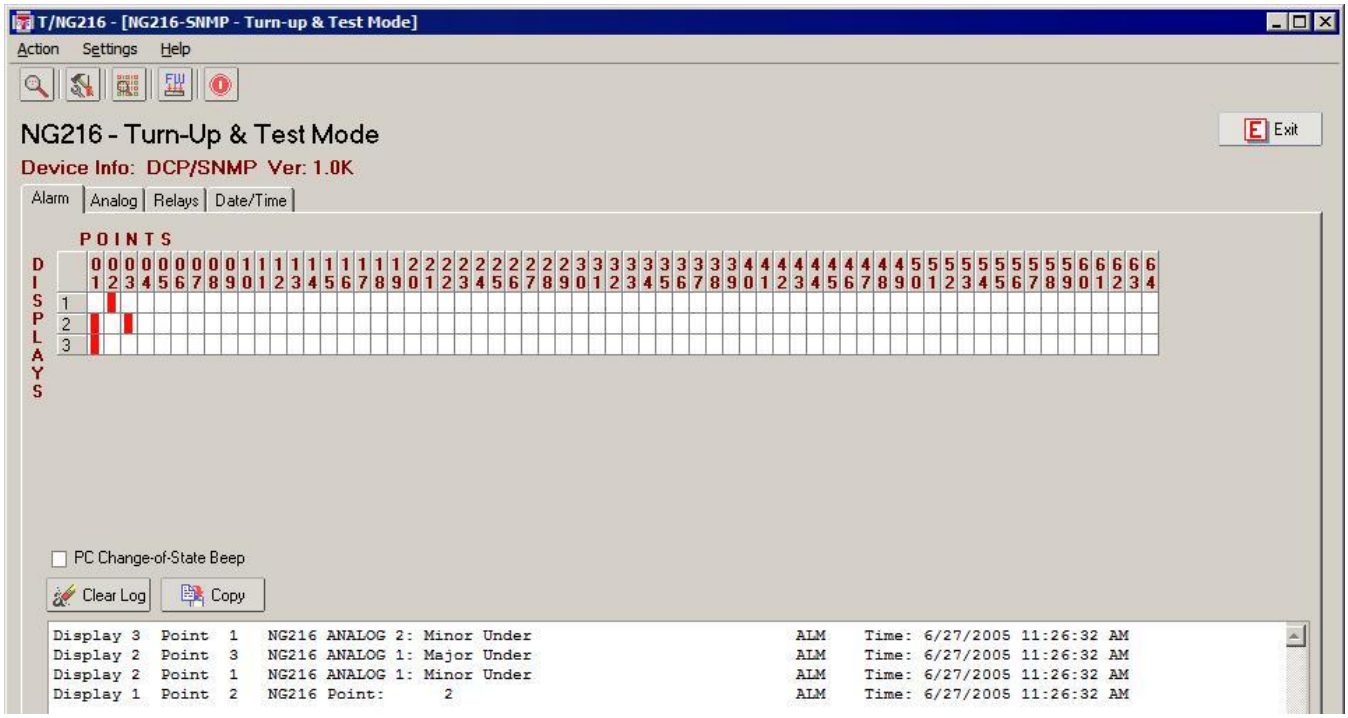

T/NG216 - [NG216-SNMP - Turn-up & Test Mode]
Action Settings Help
NG216 - Turn-Up & Test Mode
Exit
Device Info: DCP/SNMP Ver: 1.0K
Alarm Analog Relays Date/Time
POINTS
DISPLAYS
PC Change-of-State Beep
Clear Log
Copy
Display 3 Point 1 NG216 ANALOG 2: Minor Under ALM Time: 6/27/2005 11:26:32 AM
Display 2 Point 3 NG216 ANALOG 1: Major Under ALM Time: 6/27/2005 11:26:32 AM
Display 2 Point 1 NG216 ANALOG 1: Minor Under ALM Time: 6/27/2005 11:26:32 AM
Display 1 Point 2 NG216 Point: 2 ALM Time: 6/27/2005 11:26:32 AM

***Fig. 7.1.*** *Turn-up and Test Mode, with the Alarm tab selected*

**Turn-up and Test** Mode lets you monitor the NetGuardian 216 from T/NG216. This is a great tool for making sure the NG216 is configured and operating correctly.

# 7.1 Alarm Tab: Monitor and Log Alarms

The **Alarm** tab (Figure 7.1) displays and logs alarm events. The **Alarm** tab consists of two elements, the **Alarm Grid** and the **Alarm Log**.

The **Alarm Grid** maps standing alarms on a grid of 3 displays. Each display represents 64 points, even though that is more alarm points than the NG216 has.

**Display 1** shows NG216 discrete alarms (Alarm Points 1–16), relays (Alarm Points 17–18) and System Alarms (Alarm Points 27–32).

**Display 2** shows analog threshold alarms for Analog Alarm Input 1 (Alarm Points 1–4).

**Display 3** shows analog threshold alarms for Analog Alarm Input 2 (Alarm Points 1–4).

(For a full alarm map, see Section 12.1, "NetGuardian 216 Alarm Map")

When an alarm happens, a red box will appear in the grid cell corresponding to the activated alarm point. The red box will remain in the cell as long as the alarm is standing.

The **Alarm Log** maintains a continuously updated list of change of state (COS) alarms. New alarms are added to the top of the list, so the farther down you scroll, the older the record. Each alarm is listed by its Display and Alarm Point, its description, whether it's an alarm or a clear, and the date and time.

The Alarm Log only lists alarms while T/NG216 is in Turn-up and Test Mode. Exiting Turn-up and Test Mode, or quitting T/NG216, clears the Alarm Log.

To clear the Alarm Log while in Turn-up and Test Mode, click the **Clear Log** button.

Clicking the **Copy** button copies the Alarm Log to the Windows clipboard. You can then paste the Alarm Log data to a spreadsheet or text document for analysis or logging.

If the **PC Change-of-State Beep** box is checked, your PC will beep every time a new alarm happens. To silence the beep, uncheck the box.

## 7.2 Analog Tab: Display Live Analog Values

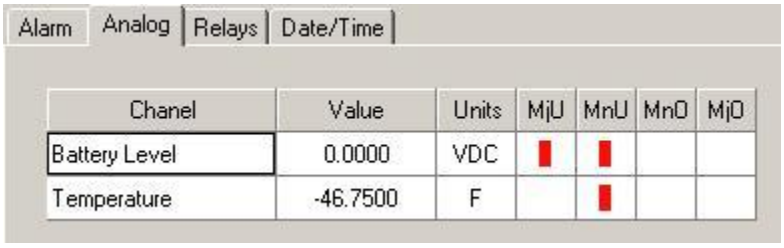



***Fig. 7.2.1.*** *The Analog tab displays a live reading of the current analog measurements*

The **Analog** tab (Figure 7.2.1) displays a live reading of the values currently measured by the analog alarm inputs. The display refreshes several times a second, so for practical purposes, it's a continuously updated live reading.

When you click the **Analog** tab, a dialog box will ask if you want to download analog channel descriptions. If you click **Yes**, the **Analog** tab will display the alarm description and display units for each analog input.

If the analog input crosses an alarm threshold, a red box will appear in the appropriate cell in the **Analog** tab display.

## 7.3 Relays Tab: Test Control Relay Action

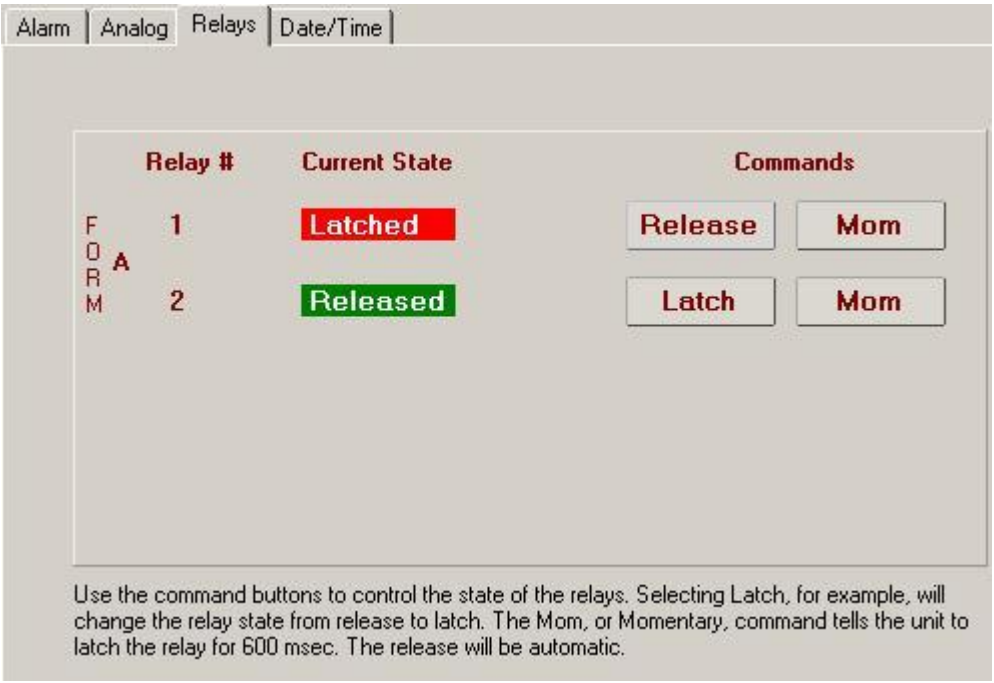



***Fig. 7.3.1.*** *The Relays tab tests control relay action*

The **Relays** tab (Figure 7.3.1) provides tools for testing control relay action.

To test a control relay, click the **Latch** or **Mom** button.

The **Latch** button will latch the relay until you click **Release**.

The **Mom** button will momentarily latch the relay for 600 milliseconds, then release it.

## 7.4 Date/Time Tab: Set and Synchronize Clock

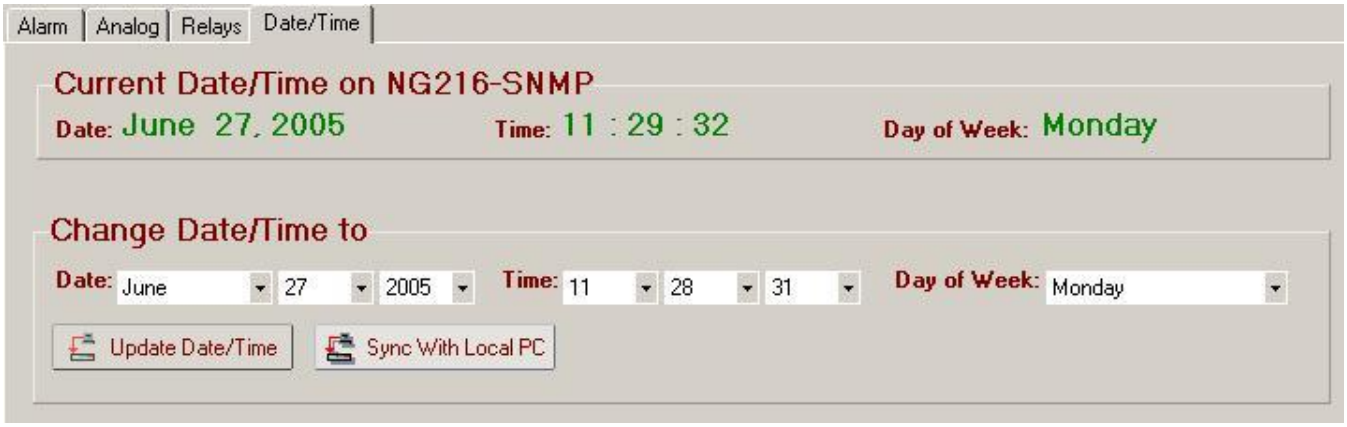



***Fig. 7.4.1.*** *Set and synchronize the NG216's real-time clock*

The **Date/Time** tab (Figure 7.4.1) provides options for setting and synchronizing the NetGuardian 216's real-time clock.

The real-time clock keeps the correct time even if the unit is shut down or rebooted. This ensures that alarms always have a correct date/time stamp. The NetGuardian 216 includes a date/time stamp in all SNMP traps.

The top part of the **Date/Time** tab displays the current time on the NG216 clock.

The bottom part of the **Date/Time** tab features controls for setting the clock manually. Choose the right time from the drop-down menus and click **Update Date/Time** to set the clock.

Clicking the **Sync With Local PC** button will synchronize the NG216 clock to your PC's clock.

## 7.5 Tuning Tab: 202 Modem Tuning

The Turn-Up & Test Mode's modem tuning controls allow you to easily measure and adjust dB transmission levels of the 202 modem to meet industry standards.

With the NetGuardian 216 connected to a power source, you can control frequency levels of the modem using T\NetGuardian 216 for Windows software. Once you're in Turn-Up & Test Mode:

1. Make sure that you have the VF test set connected to the 202 port to monitor the modem's transmit levels.

2. Begin by pushing the Start button. This will pull the unit's T202 device into tuning mode. When it has successfully entered tune mode, the button will change to "Stop" and all the other buttons will be enabled. If an error occurs, make sure that you have a T202 port on your unit and that there is a connection to the unit.

3. Once it has connected, you may change the tone being transmitted by the modem by selecting either 1200 Hz 'Mark' or 2200 Hz 'Space'. This frequency should be audible on the VF test set.

4. Use the Level Adjust controls to change the modem transmit levels. The value should be monitored on the VF test set and should be set to the DPS factory dB standard -13 dB.

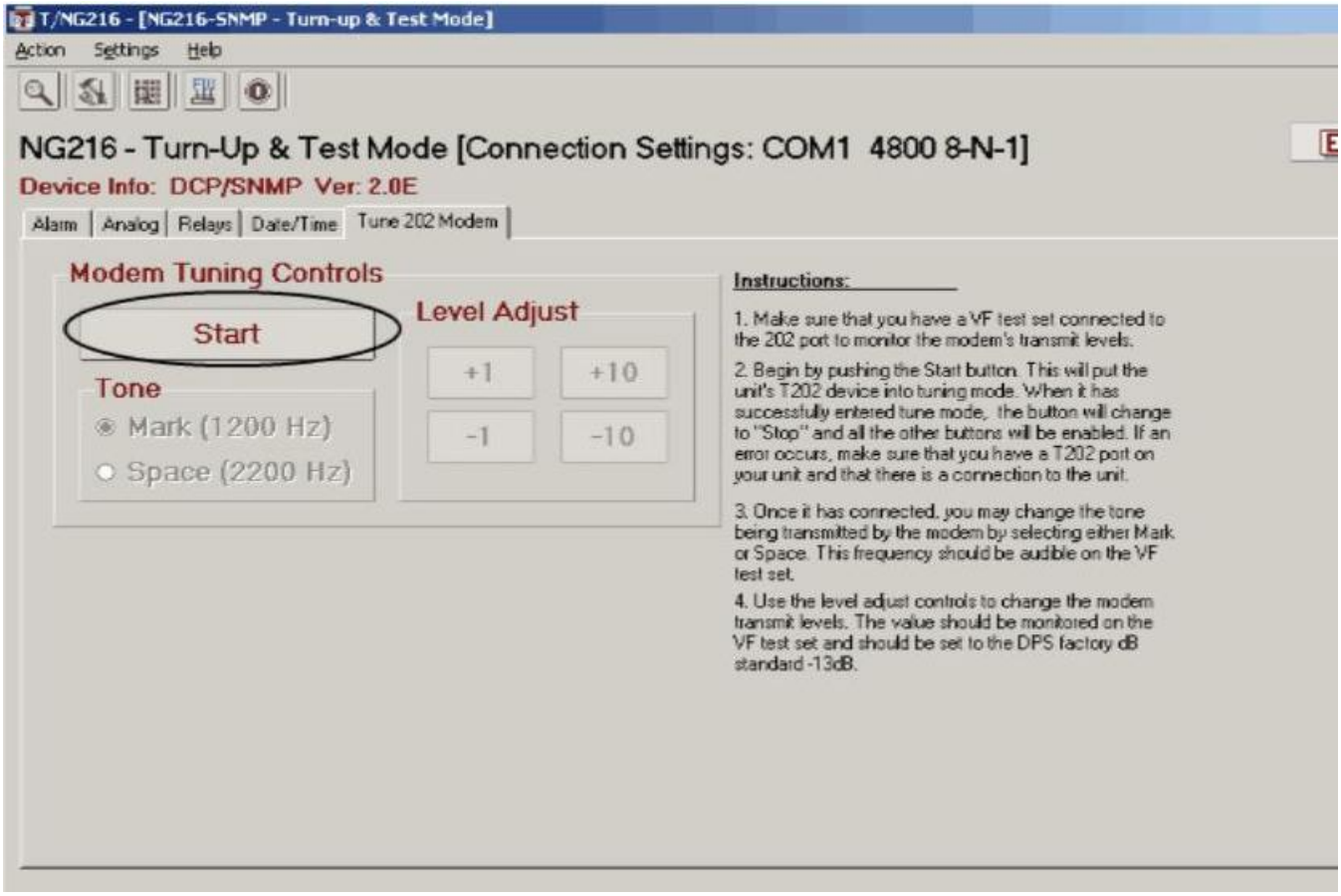

T/NG216 - [NG216-SNMP - Turn-up & Test Mode]
Action Settings Help
NG216 - Turn-Up & Test Mode [Connection Settings: COM1 4800 8-N-1]
Device Info: DCP/SNMP Ver: 2.0E
Alarm Analog Relays Date/Time Tune 202 Modem
Modem Tuning Controls
Start
Tone
Mark (1200 Hz)
Space (2200 Hz)
Level Adjust
+1
+10
-1
-10
Instructions:
1. Make sure that you have a VF test set connected to the 202 port to monitor the modem's transmit levels.
2. Begin by pushing the Start button. This will put the unit's T202 device into tuning mode. When it has successfully entered tune mode, the button will change to "Stop" and all the other buttons will be enabled. If an error occurs, make sure that you have a T202 port on your unit and that there is a connection to the unit.
3. Once it has connected, you may change the tone being transmitted by the modem by selecting either Mark or Space. This frequency should be audible on the VF test set.
4. Use the level adjust controls to change the modem transmit levels. The value should be monitored on the VF test set and should be set to the DPS factory dB standard -13dB.

***Fig. 7.5.1**. Modem tuning control. Start will initiate tuning mode.*

*Caution: The unit is offline when tune mode is active

# 8 Analyze Mode

T/NG216 - [Analyze]
Action Settings Help
NG216-SNMP - Analyze Mode
DCP Channel
Start
Stop
Exit
Hex
Green = Device Transmit Red = Device Recieve
(AA) (FC) (01) (03) (F3) (AA) (FA) (06) (00) (00) (00) (00) (CE) (76) (2B) (C0) (93) (2A) (13) (48) (82) (A9) (D6) (10) (1E) (00)
(11) (80) (B0) (BF) (47) (1C) (A0) (0A) (A2) (A1) (08) (5C) (02) (00) (84) (09) (A5) (28) (B2) (B1) (71) (12) (11) (A1) (03) (A0)
(00) (C5) (5A) (22) (2A) (10) (AA) (FC) (01) (06) (76)

***Fig. 8.1** Analyze Mode*

**Analyze** Mode is a troubleshooting tool that monitors communication traffic between the NetGuardian 216 and its alarm master. **To use Analyze Mode, you must have a craft port connection to the NetGuardian 216.**

To start monitoring communications, just start Analyze Mode, and T/NG216 will automatically display network traffic. Communications **transmitted** by the NetGuardian 216 are displayed in **GREEN**; transmissions **received** by the NetGuardian 216 are displayed in **RED**. Analyze Mode can monitor either the DCP or SNMP channel; use the drop-down menu to choose the channel you want to see. Use the **Start** and **Stop** buttons to resume or pause communication monitoring. Analyze Mode can display communications in ASCII or hexadecimal format; to select hexadecimal, check the **Hex** box.

# 9 Firmware Load

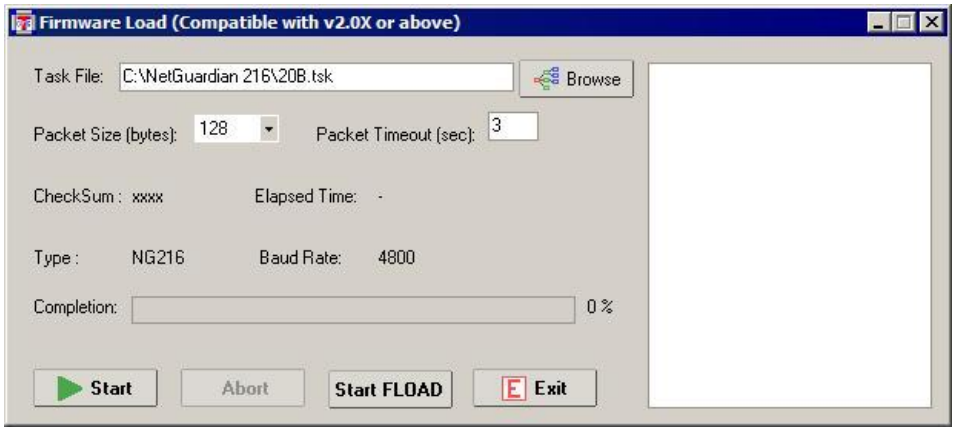



***Fig. 9.1.*** *Firmware Load window*

The NetGuardian 216 ships with the latest firmware already loaded. But DPS Telecom periodically releases free firmware updates to add new improvements to its products. You can get the best of new features without having to replace your hardware. You're entitled to free firmware updates for the lifetime of your NetGuardian 216 unit.

Check the DPS Telecom website for the latest firmware upgrades at **www.dpstelecom.com/mydps/.**

The functionality of the Firmware Load mode has been greatly enhanced in NetGuardian 216 Firmware Version 2.0. Among the improvements:

- You can now upload firmware upgrades over LAN.
- Firmware updates are now fully loaded into temporary memory on the NetGuardian 216 before they are installed in the unit's ROM. This provides greater stability and prevents lockups during firmware load.
- The firmware load process now only takes the NetGuardian 216 offline for just a couple of minutes, at the very end of the firmware load process. This allows alarm monitoring to continue during firmware loads, with only a brief interruption.

**Note:** The new firmware load features are supported only on NetGuardian 216 units running Firmware Version 2.0 or later. Legacy units running Firmware Version 1.0 or 1.1. must be sent to DPS Telecom to be upgraded to the Version 2.0 series.

The latest version of the T/NG216 configuration utility is fully backwards compatible with NetGuardian 216s running earlier firmware; however, to load firmware on units that are running Firmware Versions 1.0 or 1.1, you must use the Firmware Load Legacy Mode, which is described in Section 9.2, "Firmware Load: Legacy Mode."

**To load new firmware on a NetGuardian 216 running Firmware Version 2.0 or later, follow these steps:**

1. Connect your PC to the NetGuardian 216, using either a LAN or craft port connection. (For instructions, see Section 5.4, "Connecting the NetGuardian via Craft Port," and Section 5.5, "Connecting to the Craft Port via LAN."
2. Click **Load Firmware** in the mode selection dialog box. (See Section 5.2, "Starting T/NG216.")
3. The **Firmware Load** window will open. (See Figure 9.1, above.) Click the **Browse** button. An **Open TSK File** dialog box will open. Select the Task (*.tsk) file with the new firmware.
4. Click **Start**. T/NG216 will upload the new firmware to the NetGuardian 216. The **Completion** progress

bar will indicate the progress of the upload. The text box at the right of the **Firmware Load** window will display upload status messages.

5. When the upload is complete, the NetGuardian 216 unit will go offline momentarily and then reboot.

## 9.1 Troubleshooting Firmware Load

In most cases, the firmware load process should run smoothly without any problems. If, however, the firmware load process hangs or freezes, try these troubleshooting steps:

- By default, the **Packet Size** is set for the highest setting, 128 bytes. Try selecting a smaller packet size.
- By default, the **Packet Timeout** setting is three (3) seconds. Try setting a longer packet timeout.
- If the firmware load process seems to be frozen, it may be that the firmware update has been fully transferred to the NetGuardian 216's temporary memory, but the FLOAD utility has not installed the update. Click the **Start FLOAD** button to force the FLOAD utility to install the update.
- If you see the error dialog box shown below in Figure 9.1.1 ...

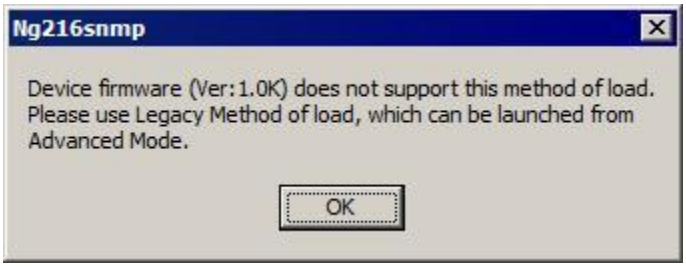

Ng216snmp
Device firmware (Ver:1.0K) does not support this method of load.
Please use Legacy Method of load, which can be launched from
Advanced Mode.
OK

***Fig. 9.1.1.*** *If you see this message, use Firmware Load legacy mode*

...you must use **Firmware Load Legacy Mode** to update your NetGuardian 216. For instructions, see Section 9.2, "Firmware Load: Legacy Mode"

## 9.2 Firmware Load: Legacy Mode

If your NetGuardian 216 unit is running Firmware Version 1.0 or 1.1, you cannot update your firmware using the standard Firmware Load. However, the earlier Firmware Load functionality has been preserved in the **Firmware Load Legacy Mode.**

**To load new firmware on a NetGuardian 216 running Firmware Version 1.0 or 1.1, follow these steps:**

1. You must have a craft port connection to the NetGuardian 216. Connect your PC to the NetGuardian 216's craft port and start T/NG216. (For instructions, see Section 5.4, "Connecting to the NetGuardian 216 via Craft Port.")

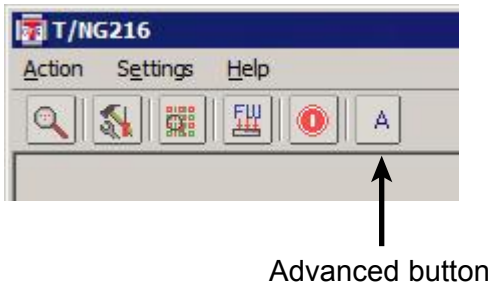



***Fig. 9.2.1.*** *Advanced button*

2. Start Advanced Mode, either by clicking the **Advanced** button on the toolbar or by choosing **Advanced** from the **Action** menu.

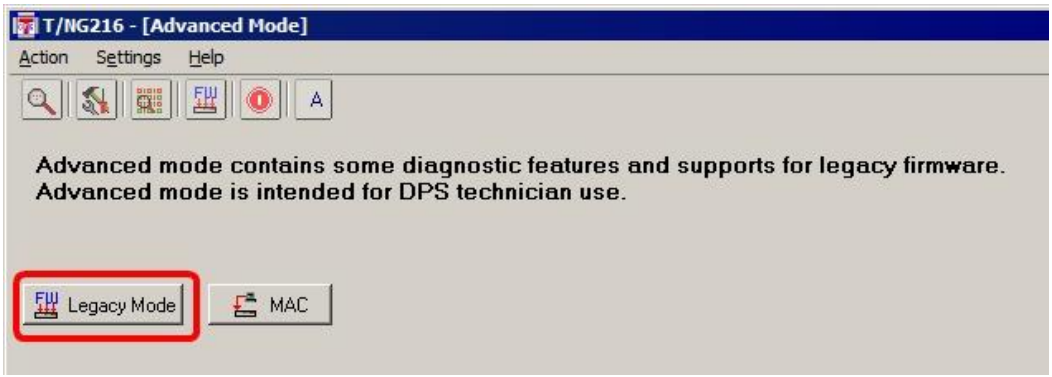



***Fig. 9.2.2.*** *Advanced Mode with Legacy Mode button*

3. Click the **Legacy Mode** button.

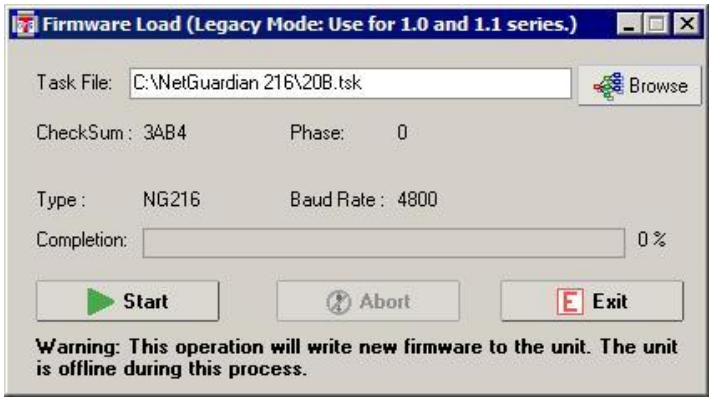



***Fig. 9.2.3.*** *Firmware Load Legacy Mode*

4. The **Firmware Load Legacy Mode** window will open. Click the **Browse** button. An **Open TSK File** dialog box will open. Select the Task (*.tsk) file with the new firmware.
5. Click **Start**. T/NG216 will upload the new firmware to the NetGuardian 216.

**The firmware load can take up to 20 minutes and CANNOT be aborted. The NetGuardian 216 is OFFLINE during the firmware load. When the firmware load is complete, the NetGuardian 216 will automatically reboot.**

## 9.3 LED Display During Firmware Load

While the firmware load is in progress, the NetGuardian 216's front panel LEDs display the following:

1. Alternating **RED-GREEN-RED** pattern when the firmware load software is detected.
2. **ALL RED** when waiting for DPSLOAD signal.
3. **ALL GREEN** when DPSLOAD signal received.
4. **SLOW** (1 LED step every 10 seconds) RED LED walk while flash memory is wiped. Each LED step means 16 K was overwritten with FF.
5. **FAST** (5 LED steps every second) RED LED walk while data is received and committed to flash memory. Each LED step means a data packet was processed.
6. Alternating **ALL GREEN/ALL RED** pattern when main application boots following the firmware load.

# 10 Front and Back Panel LEDs

***Fig. 10.1.*** *Front and back panel LEDs*

| FRONT PANEL LEDS | | |
|---|---|---|
| **LED** | **Status** | **Description** |
| Primary | Flashing Red | New alarm |
| | Solid Red | Standing alarm acknowledged |

| | | |
|---|---|---|
| CD | Flashing Red | Communication error detected |
| LAN | Flashing Green | NG 216 data transmit over LAN |
| | Flashing Red | NG 216 data receive over LAN |
| Craft | Flashing Green | NG 216 data transmit over craft port |
| | Flashing Red | NG 216 data receive over craft port |
| FA | Solid Red | Fuse failure |

***Table 10.A.*** *Front Panel LED Descriptions*

| BACK PANEL LEDS | | |
|---|---|---|
| **LED** | **Status** | **Description** |
| PWR | Solid Green | Power supply OK |
| | Solid Red | –48V and GND leads reversed |
| LAN | Flashing Green | Data transmit over LAN |
| LNK | Solid Green | Ethernet link OK |
| | Off | Ethernet link failure |

***Table 10.B.*** *Back Panel LED Descriptions*

# 11 Alarm Speaker

***Fig. 11.1.*** *Mode (speaker silence) button and volume control*

The NetGuardian 216 has a built-in speaker for local audible alarm notification. By default, the NetGuardian 216 ships with the speaker turned off. To activate the speaker, check the **Speaker enabled** option in the T/NG216 configuration software. (For instructions, see Section 6.4, "Device Tab: General NG216 Options.)

**Note:** The speaker can be enabled only if the DCP Channel (T/Mon NOC alarm reporting option) is activated. (For more information about activating the DCP channel, see Section 6.5.1, "DCP Channel: T/Mon NOC Alarm Reporting Options.")

If it's enabled, the speaker will beep repeatedly when new alarms happen.

To adjust the speaker volume, use the volume control thumbwheel on the NetGuardian's front panel. (See Figure 11.1.)

To silence the speaker, press and hold down the Mode button on the front panel. The speaker will stay silenced as long as you keep the Mode button pressed. When you release the Mode button, the speaker will start beeping again.

# 12 Reference Section

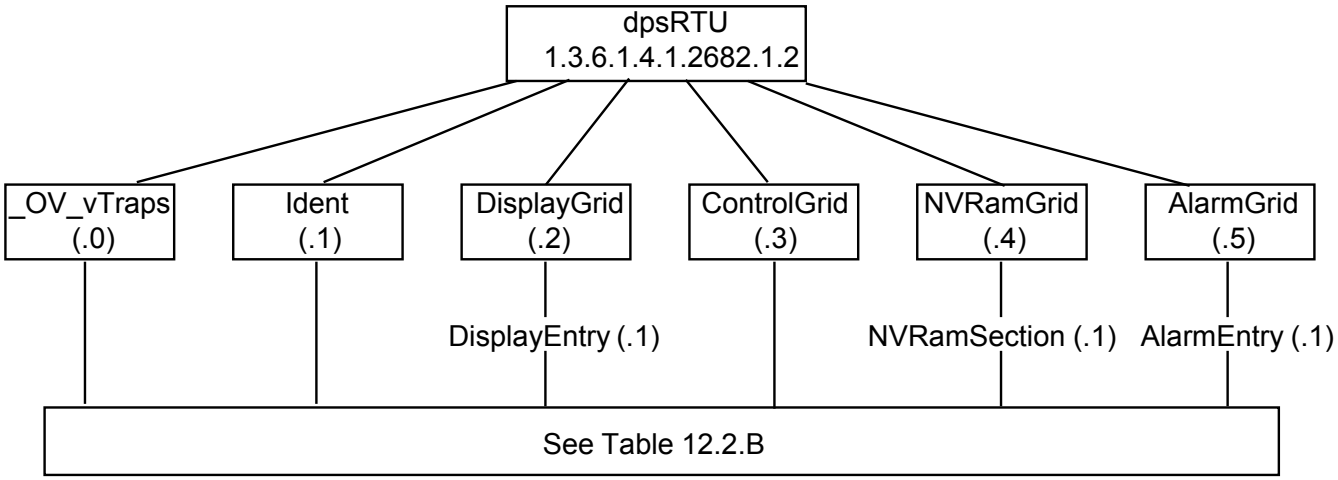
## 12.1 NetGuardian 216 Alarm Map

| | Description | Port | Address | Display | Points |
|---|---|---|---|---|---|
| Display 1 | Discrete Alarms | 99 | 1 | 1 | 1-16 |
| | Control Relays | 99 | 1 | 1 | 17-18 |
| | Unused | 99 | 1 | 1 | 19-24 |
| | **System Alarms** | | | | |
| | Default Configuration | 99 | 1 | 1 | 25 |
| | Unused | 99 | 1 | 1 | 26 |
| | MAC Address Not Set | 99 | 1 | 1 | 27 |
| | IP Address Not Set | 99 | 1 | 1 | 28 |
| | LAN Hardware Error | 99 | 1 | 1 | 29 |
| | SNMP Processing Error | 99 | 1 | 1 | 30 |
| | SNMP Community Error | 99 | 1 | 1 | 31 |
| | LAN Tx Packet Drop | 99 | 1 | 1 | 32 |
| Display 2 | Analog 1 Minor Under | 99 | 1 | 2 | 1 |
| | Analog 1 Minor Over | 99 | 1 | 2 | 2 |
| | Analog 1 Major Under | 99 | 1 | 2 | 3 |
| | Analog 1 Major Over | 99 | 1 | 2 | 4 |
| Display 3 | Analog 2 Minor Under | 99 | 1 | 3 | 1 |
| | Analog 2 Minor Over | 99 | 1 | 3 | 2 |
| | Analog 2 Major Under | 99 | 1 | 3 | 3 |
| | Analog 2 Major Over | 99 | 1 | 3 | 4 |

***Table 12.1.A.*** *NetGuardian 216 alarm map*

# 12.2 NetGuardian 216 Trap OIDs

The illustration and tables below outline the SNMP OIDs for NetGuardian-16S alarm points. This illustration begins with dpsRTU; however, the MIB object identifier tree has several levels above that. The full English name is as follows: root.iso.org.dod.internet.private.enterprises.dps-Inc.dpsAlarmControl.dpsRTU. Therefore, dpsRTU's full object identifier is 1.3.6.1.4.1.2682.1.2. Each level beyond dpsRTU adds another object identifying number. For example, the object identifier of the Display portion of the Control Grid is 1.3.6.1.4.1.2682.1.2.3.3 because the object identifier of dpsRTU is 1.3.6.1.4.1.2682.1.2 + the Control Grid (.3) + the Display (.3).




| (O.)_OV_Traps points |
|---|
| **_OV_vTraps (1.3.6.1.4.1.2682.1.2.0)** |
| PointSet (.20) |
| PointClr (.21) |
| SumPSet (.101) |
| SumPClr (.102) |
| ComFailed (.103) |
| ComRestored (.014) |
| P0001Clr (.20001) through P0064Set (.10064) |
| P0001Clr (.20001) through P0064Clr (.20064) |

| (.1) Identity points |
|---|
| **Ident (1.3.6.1.4.1.2682.1.2.1)** |
| Manufacturer (.1) |
| Model (.2) |
| Firmware Version (.3) |
| DateTime (.4) |
| ResyncReq (.5)* |
| * Must be set to "1" to perform the resync request which will resend TRAPs for any standing alarm. |

| (.2) DisplayGrid points |
|---|
| **DisplayEntry (1.3.6.1.4.1.2682.1.2.2.1)** |
| Port (.1) |
| Address (.2) |
| Display (.3) |
| DispDesc (.4)* |
| PntMap (.5)* |

| (.3) ControlGrid points |
|---|
| **ControlGrid (1.3.6.1.4.1.2682.1.2.3)** |
| Port (.1) |
| Address (.2) |
| Display (.3) |
| Point (.4) |
| Action (.5) |

| (.4) NVRamSection points |
|---|
| **NVRamSection (1.3.6.1.4.2682.1.2.4.1)** |
| NVsNmbr (.1) |
| NvsData (.2) |
| NvsStatus (.3) |

| (.5) AlarmEntry points |
|---|
| **AlarmEntry (1.3.6.4.1.2682.1.2.5.1)** |
| Aport (.1) |
| AAddress (.2) |
| ADisplay (.3) |
| APoint (.4) |
| APntDesc (.5)* |
| AState (.6) |
| * For specific alarm points, see Table 13.1.A. |

***Table 12.2.A.*** *MIB object identifier tree descriptions*

| Display | Description | SNMP Trap Numbers | |
|---|---|---|---|
| | | Set | Clear |
| 1 | Discrete Alarm Point 1 | 8001 | 9001 |
| | Discrete Alarm Point 2 | 8002 | 9002 |
| | Discrete Alarm Point 3 | 8003 | 9003 |
| | Discrete Alarm Point 4 | 8004 | 9004 |
| | Discrete Alarm Point 5 | 8005 | 9005 |
| | Discrete Alarm Point 6 | 8006 | 9006 |
| | Discrete Alarm Point 7 | 8007 | 9007 |
| | Discrete Alarm Point 8 | 8008 | 9008 |
| | Discrete Alarm Point 9 | 8009 | 9009 |
| | Discrete Alarm Point 10 | 8010 | 9010 |
| | Discrete Alarm Point 11 | 8011 | 9011 |
| | Discrete Alarm Point 12 | 8012 | 9012 |
| | Discrete Alarm Point 13 | 8013 | 9013 |
| | Discrete Alarm Point 14 | 8014 | 9014 |
| | Discrete Alarm Point 15 | 8015 | 9015 |
| | Discrete Alarm Point 16 | 8016 | 9016 |
| | Control Relay 1 | 8017 | 9017 |
| | Control Relay 2 | 8018 | 9018 |
| **System Alarms** | | | |
| 1 | Default Configuration | 8025 | 9025 |
| | MAC Address Not Set | 8027 | 9027 |
| | IP Address Not Set | 8028 | 9028 |
| | LAN Hardware Error | 8029 | 9029 |
| | SNMP Processing Error | 8030 | 9030 |
| | SNMP Community Error | 8031 | 9031 |
| | LAN Tx Packet Drop | 8032 | 9032 |
| 2 | Analog 1 Minor Under | 8065 | 9065 |
| | Analog 1 Minor Over | 8066 | 9066 |
| | Analog 1 Major Under | 8067 | 9067 |
| | Analog 1 Major Over | 8068 | 9068 |
| 3 | Analog 2 Minor Under | 8069 | 9069 |
| | Analog 2 Minor Over | 8070 | 9070 |
| | Analog 2 Major Under | 8071 | 9071 |
| | Analog 2 Major Over | 8072 | 9072 |

***Table 12.2.B.*** *Display descriptions and SNMP Trap numbers for the NetGuardian 216*

## 12.3 SNMP Granular Trap Packets

| SNMP Header | Description |
|---|---|
| 0 | Version |
| Public | Request |
| Trap | Request |
| 1.3.6.1.4.1.2682.1.2 | Enterprise |
| 126.10.230.181 | Agent address |
| Enterprise Specific | Generic Trap |
| 8001 | Specific Trap |
| 617077 | Time stamp |
| 1.3.7.1.2.1.1.1.0 | Object |
| NetGuardian 216 v1.0K | Value |
| 1.3.6.1.2.1.1.6.0 | Object |
| 1-800-622-3314 | Value |
| 1.3.6.1.4.1.2682.1.2.4.1.0 | Object |
| 01-02-1995 05:08:27.760 | Value |
| 1.3.6.1.4.1.2682.1.2.5.1.1.99.1.1.1 | Object |
| 99 | Value |
| 1.3.6.1.4.1.2682.1.2.5.1.2.99.1.1.1 | Object |
| 1 | Value |
| 1.3.6.1.4.1.2682.1.2.5.1.3.99.1.1.1 | Object |
| 1 | Value |
| 1.3.6.1.4.1.2682.1.2.5.1.4.99.1.1.1 | Object |
| 1 | Value |
| 1.3.6.1.4.1.2682.1.2.5.1.5.99.1.1.1 | Object |
| Rectifier Failure | Value |
| 1.3.6.1.4.1.2682.1.2.5.1.6.99.1.1.1 | Object |
| Alarm | Value |

***Table 12.3.A.*** *Example of SNMP headers and descriptions*

Table 12.3.A shows the information contained in the SNMP Trap packets sent by the NetGuardian 216. The NetGuardian 216 sends a unique, granular Trap OID for each alarm point, and the Trap includes the user-configured alarm description in a variable binding value field.

There are two ways your SNMP manager can identify alarms from the NetGuardian:

- Read the unique, granular Traps OID for each alarm
- Read the generic Trap OID for any NetGuardian 216 Trap (1.3.6.1.4.1.2682.1.2.5.1.2.99.1.1.1) and parse the variable binding for the alarm description.

# 13 Technical Support

DPS Telecom products are backed by our courteous, friendly Technical Support representatives, who will give you the best in fast and accurate customer service. To help us help you better, please take the following steps before calling Technical Support:

1. **Check the DPS Telecom website.**
   You will find answers to many common questions on the DPS Telecom website, at **http://www.dpstele.com/support/**. Look here first for a fast solution to your problem.

2. **Prepare relevant information.**
   Please have your user manual and hardware serial number ready. Having important information about your DPS Telecom product in hand when you call will greatly reduce the time it takes to answer your questions. If you do not have all of the information when you call, our Technical Support representatives can assist you in gathering it. Please write the information down for easy access.

3. **Have access to troubled equipment.**
   Please be at or near your equipment when you call DPS Telecom Technical Support. This will help us solve your problem more efficiently.

4. **Call during Customer Support hours.**
   Customer support hours are Monday through Friday, from 7 A.M. to 6 P.M., Pacific time. The DPS Telecom Technical Support phone number is **(559) 454-1600**.

**Emergency Assistance:** *Emergency assistance is available 24 hours a day, 7 days a week. For emergency assistance after hours, allow the phone to ring until it is answered with a automated paging message. Follow the automated menu to leave your message or page a technician. An on-call technical support representative will return your call as soon as possible.*

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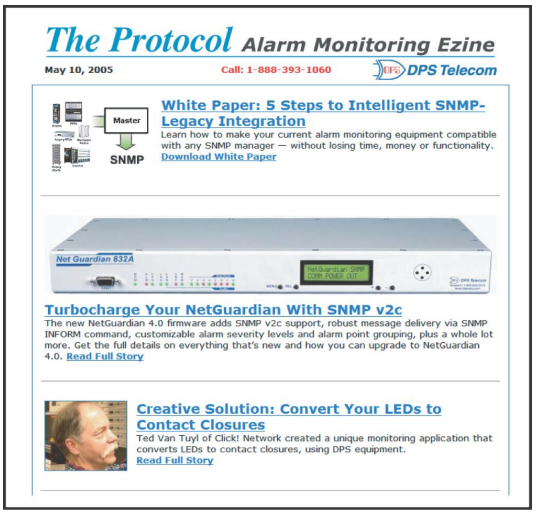
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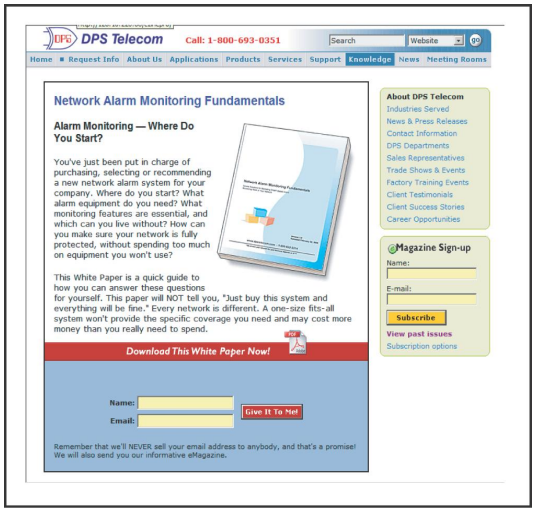
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